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Original Communications.

URETHRAL CARUNCLE; CURETTING FOR ABORTION; PESSARIES.

CLINICAL LECTURE DELIVERED AT THE JEFFERSON HOSPITAL, OCTOBER 31, 1893.

BY E. E. MONTGOMERY, M.D.,
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GENTLEMEN:—The first patient I bring before you is a young woman with a projection from the orifice of the urethra. This has been troubling her for some length of time, and has been associated with much pain and distress. She has been treated in the hospital before for nervous disease, and it is quite possible that this growth may have had something to do with it. This growth is known as a urethral caruncle; it affects the urethra, is papillary, arising from a thickening or localized inflammation of the mucous membrane of the urethra, probably begins in a gland, the duct of which becomes occluded, causing the wall to be thickened and form an obstruction, thus leading to its extrusion. The growth becomes abraded, leaving a red, strawberry-like mass,

sometimes protruding from the orifice of the urethra; its nerve-terminations are exposed, rendering it extremely sensitive. Passage of urine over it produces severe, agonizing pain. Its projection from the orifice of the urethra causes it to be frequently irritated by the clothing, by pressure, and it is a source of pain during coition. It may sometimes be situated some distance up the canal, requiring the urethra to be dilated for its complete removal. In some cases a number of growths may be present. Treatment consists in taking a pair of forceps, drawing the growth down, and snipping it off with scissors. The base may be cauterized with nitric acid or with the actual cautery. Before proceeding to treatment, however, it is quite important to keep in mind the fact that not every protrusion from the urethra is necessarily a caruncle, as we may have a prolapse of the wall of the urethra in which the orifice will be seen in the centre of the prolapsed portion. The excision of such a mass would mean the cutting out of the entire section of the urethra, and almost certain resulting stricture. Again, we may have the bladder wall prolapsed through the urethra, or, in other words, a vesical hernia, so that this condition must also be eliminated before we resort to operative procedure. Pressure against the urethra with the finger, or the introduction of a catheter or bougie, will be sufficient to determine its true character. In removing a caruncle, as in every operation about the genital tract, we are careful to have the parts thoroughly clean to avoid danger of infection. We want the wound to heal up as quickly as possible. If the parts are kept clean it is not likely to give rise to any serious trouble. Healthy urine flowing over the part does not injure it. As a germicide or disinfecting agent, we are using at present in this clinic a solution of oil of cinnamon, taking one drop of oil of cinnamon to the ounce of distilled water (1 to 500). The effects of this agent have been carefully investigated in the laboratory of the college and also in the private laboratory of Dr. D. B. Kyle, who has devoted much attention to it. It is found in this strength to be a very effective germicide. Dr. Kyle's theory is that the oil of cinnamon, like all volatile oils, coagulates or contracts the protoplasmic envelope of the germ and thus imprisons it in its contracted shell, rendering it inert. As the agent has been tried effectively in the laboratory, we propose to make some clinical studies with it, and feel certain that if it is satisfactory it will be far preferable to the germicides we are now using, as the bichloride, on account of its poisonous character, cannot be used in the peritoneal cavity. In addition, it is a source of danger, from the possibility of the solution being mistaken and used for other purposes. The oil of cinnamon gives a very fragrant odor, and in the strength of 1 to 500 reddens the skin and causes it to tingle. It is free, however, from poisonous effect, and, if necessary, could be used in the abdominal cavity without danger. Now, having carefully cleansed the parts, seized this growth with a pair of forceps, and snipped it off close to its base, we find that considerable bleeding results. In the excision of large masses, bleeding not infrequently is free. It can, however, be readily prevented by packing gauze tightly into the vagina, making pressure upon the urethra, and with a pad pressing the urethra firmly against the symphysis. The patient will be permitted to void her urine, as the evacuation of the urine will be attended with less danger and discomfort than would be the use of the catheter. If it is necessary to use the catheter, the parts should be carefully sponged first with a disinfectant solution before the catheter is introduced, and the latter should be a glass one which has been carefully disinfected and kept in a disinfectant solution during the intervals of its use. It will not be amiss for me to say at this juncture that you cannot observe too great care in the use of the catheter, and for whatever purpose it may be required, it should be the rule to carefully cleanse the vestibule before it is introduced. For this reason I would advise you to discard the old procedure of introducing the catheter by touch, as by inspection you are better able to see that a clean instrument is passed through a clean surface, and the slight offence to the modesty of the patient does not compensate for the danger of infection of the urethra and bladder and the long-continued suffering resulting from a urethritis or cystitis.

Curetting for Abortion.—The next patient was brought to the house by Dr. Fisher, chief of the clinic, from one of the smaller streets of the city. She had undergone an abortion, and when he called to see her he found a portion of the placenta remaining. She had quite a severe hemorrhage, causing her to present the blanched appearance you now see. Since her admission to the house she has had an elevation of temperature, reaching last night 101° F., indicating that there is some product remaining. We have placed her under an anæsthetic, and have carefully washed the vagina with a solution of creolin and soap, wrapping the finger with gauze in order to thoroughly clean out the crypts and folds. We will proceed to the

dilatation of the cervix and the use of the curette. Now, as I have repeatedly endeavored to impress upon you, in all cases of sepsis, whether arising as a result of abortion or following confinement, the important indication is to thoroughly sterilize the uterus. This is frequently attempted by the use of disinfecting injections; but when we consider that the uterine mucous membrane is covered over with decidua and *débris* that is thrown off from the involuting uterus, we can readily understand that even the most powerful germicides will only act on the surface, while beneath it will remain large colonies of multiplying germs, the products of which are absorbed, producing elevation of temperature and secondary suppurative foci. The disease may extend either through the mucous membrane of the uterus to that of the Fallopian tubes and cause a pelvic peritonitis, or infect the ovaries, producing ovaritis or collections of pus in the tubes; or we may have inflammation passing through the blood-vessels, infecting the uterine sinuses and producing multiple abscesses therein, or secondary inflammations in the larger veins, producing phlegmasia; or it may, again, pass through the lymphatics, producing suppuration in the pelvic lymphatic glands. Through the infection of the blood-vessels we may have large collections of pus in the cellular tissue of the broad ligament while there has been no inflammation of the tubes, or, again, we may have tubes the source of infection,—that is, the infection may travel through the tubes, setting up peritonitis or ovaritis, without having caused inflammation in the tube itself. When we consider, then, the danger to which every patient is subject, and realize that the sterilization cannot be accomplished by irrigation alone, it is incumbent upon us to exercise prompt measures to prevent the infection extending beyond the surfaces already involved. This is best accomplished by carefully dilating the cavity, particularly in abortion, and the use of the sharp curette, going over the entire surface of the cavity, scraping away the *débris*, and either irrigating the cavity through the handle of the curette or following curetting by irrigation, in this way sterilizing the surface as thoroughly as possible and removing the infected material. As we are not always absolutely certain, however, that the curetting has been complete and that some small particles of infected material may not still remain, it is well to provide for the thorough drainage of the uterus, so that the blood resulting from the curetting shall not be retained, again infected, and rendered a source for further propagation of poison. This drainage is best accomplished by packing the cavity with iodoform gauze; the pressure of the gauze in the cavity prevents further bleeding, promotes by its capillary action thorough drainage, stimulates by its presence as a foreign body contraction of the uterus, produces a current of serum into its meshes, thus increasing the eliminating power of the uterus, keeps the surfaces apart, and, in addition to drainage, promotes the more rapid decrease of the organ.

Now, in dilating this canal, you will notice that I have used graduated bougies in preference to the parallel-bar dilators. I do this for the reason that dilatation can be accomplished more readily, with less injury to the cervix, as the bougies stretch the cervix on all sides and produce less tendency to laceration. The cervix is held by the volsellum, and for this purpose I use a three-pronged instrument, as it holds more firmly and is consequently less likely to do injury. The uterus is pulled over the bougies. In introducing the bougies it is important to exercise care that they should not, particularly the smaller ones, be used with force, as in weak walls they may puncture the walls of the uterus, as I have had occur in my own experience in two cases, in neither of which did the patient suffer any inconvenience. By the use of these dilators the cervix is distended to the size of the largest number,—43. The curette I use is what is known as the Duke curette, with an opening through the handle, by which, on attaching it to a fountain syringe, a current of disinfecting fluid can play constantly upon the curetted surface, washing away the *débris* as fast as it is scraped off. For the purpose of irrigation through the curette, we use a one-per-cent. solution of creolin in distilled water. As the curetting is done, the finger of the other hand may be passed into the vagina alongside of the cervix, pressing the uterus against the instrument, in this way controlling its action. With the completion of the operation a gauze tampon is carried to the fundus of the uterus, packing it well into the body of the organ for the purposes we have already mentioned. Now, as I pack the gauze into the cavity of this uterus, we recognize that it still continues to bleed, and on looking at it we see we have torn the soft, friable cervix on the right side, probably through the circular artery. In order to prevent further bleeding and relieve the patient of the effect of such a tear, I will introduce a suture here upon the side, bringing together this surface. The gauze is pushed over so that it will not be included in the suture. There is still remaining a sufficient amount of cervical canal to serve

every purpose. The patient will be kept quiet in bed, and permitted to pass her urine, if she can do so; otherwise the catheter will be used. The bowels will be looked after, and the gauze will be removed at the end of three or four days. In considering the progress of infection, we will find that those cases in which the disease is carried into the system either by the blood-vessels or lymphatics are much more active and rapid in their course than where it passes by the continuous mucous membrane. The introduction of the poison through the tube leads to a localized peritonitis and gluing up of the abdominal end of the tube and the consequent localization of the disease. In the blood-vessels, however, this is not so rapidly accomplished, and the poison has the greater opportunity for more thorough dissemination. Localized abscesses may form in the walls of the uterus, and these cases will be characterized by exceedingly high temperature. I remember a case in the Philadelphia Hospital, with a temperature reaching 107° F., only modified by the use of the cold pack. The patient died with a temperature of 108° F. An autopsy disclosed less than a teaspoonful of pus in the uterine sinuses upon one side, which was the only pathological symptom present.

Pessaries.—I have here a specimen that illustrates the importance of careful consideration in the use of pessaries. The one I show you is a Hodge pessary, covered over with calcareous deposits from the secretions of the vagina; it was worn eleven years without removal. It was removed this morning in the dispensary service, and was found with this coating. Such a deposit upon a pessary roughens its surface, giving rise to irritation of the mucous membrane and ulceration. If pressure is severe, perforation of the anterior or posterior wall may occur, resulting in a recto- or vesico-vaginal fistula; or the irritation of the pessary may produce exuberant granulations, which may cause it to be completely buried in the tissues. I was called some years ago to see a case of this kind, in which an old woman was suffering from hemorrhage and a very profuse discharge. She was supposed to be suffering from malignant disease. Upon examination, I found the small end of a pessary projecting, the posterior bar of which was buried in tissue to the depth of more than half an inch and firmly fixed. As it would have required considerable dissection to cut the pessary out, I preferred to draw it down upon one side and with a pair of bone-pliers cut through it. This was done on the opposite side and the remaining portion pulled out of the track. The patient recovered, and, it is needless to say, the condition for which the pessary was used was also cured, though this is not a plan of treatment for prolapse I would recommend. In the Philadelphia Hospital some years ago I removed a glass pessary from a woman who had worn it for thirteen years. The pressure of the pessary had given rise to a cicatricial ring immediately beneath it, so that only a small portion of the pessary could be exposed. It was removed by passing a pair of fenestrated forceps arranged something like obstetrical instruments, so that one blade could be passed after the other. After the forceps were applied, it required considerable work to deliver the pessary. Unless you have an instrument specially devised, the removal of these glass pessaries is attended with considerable danger of their being broken. A case occurred in the Philadelphia Hospital in which a glass ball was broken in an old woman, causing perforation of the bladder and a vesico-vaginal fistula high up in a cicatricial canal that was exceedingly unfavorable for operative procedure. The result was increased suffering and distress to this old lady. An accident of this kind occurred to the late Dr. Levis, of this city, who immediately packed the vagina with plaster of Paris, covering over the glass, and after this had become firm and hard, the whole mass was removed, thus saving the surface from being injured by the glass.

THE TREATMENT OF EMPYEMA, WITH SELECTED CASES.

By J. William White, M.D.,
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and
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IN its broadest application an empyema is a collection of pus in one of the natural cavities of the body. As usually employed, however, it refers to a purulent collection in the pleural sac, and it is here used in this sense. Among the common causes of this condition are a previous pleural effusion which has become purulent, or as occurs in the course of various infectious diseases, the collection may be purulent from the beginning. Occasionally an empyema may result from an hepatic abscess which has perforated the diaphragm, from a pulmonary abscess which has discharged through the pleura, or from an abscess elsewhere which has found its way into the pleura. Finally, it

may result from a fractured rib or a penetrating wound of the chest.

Fluid collections in the pleural sac may accompany, besides pleurisy, simple and tuberculous pneumonia, pulmonary tuberculosis, and typhoid fever. The exudation in these cases is serous or sero-fibrinous, and may remain in this condition or may become purulent. In the light of our present knowledge, the change from the serous to the purulent condition must be explained by the invasion of micro-organisms.

The bacteriology of this subject has received considerable attention in recent years. As the result of his investigations, Bewley (*Dublin Journal of the Medical Sciences*, 1890) makes the following classifications of empyema:

1. Those cases in which ordinary pyogenic micrococci make their way into the pleural sac through an opening in the chest-wall or from the lung, by the bursting of a pulmonary abscess, or gangrene, into the pleural cavity.

2. Those cases occurring in connection with croupous pneumonia and caused by pneumococci.

3. Those occurring in persons afflicted with phthisis, and which are tubercular.

4. Those cases in which, under various circumstances, pyogenic micrococci are able to enter and live for some time in the tissues of the body without doing harm.

5. Those cases which are a part of a general pyæmia.

Coplick (*Archives of Pediatrics*, 1890) records his results of careful bacteriological investigations of twelve cases of empyema in children. These cases are divided as follows:

1. Those in which the bacterioscopic results are not uniform and the micro-organisms found not diagnostic.

2. Those in which he was able to establish the presence of the pneumococcus of Fränkel and Weichselbaum in the purulent exudate.

3. Empyema occurring in tubercular subjects.

4. Those cases in which a focus of suppuration situated outside the chest can be pointed to with a degree of probability as the possible source of infection. He arrives at the conclusion that a large proportion of empyemas in children follow or complicate processes in the lung of an acute character.

Parmenter (*Buffalo Medical and Surgical Journal*, January, 1894) quotes the classification of Courtois-Suffit, which divides cases of purulent pleurisy into (*a*) pure and (*b*) mixed forms. The first class includes,—

1. Empyema from the pneumococcus. This is said to form twenty-five per cent. of the purulent pleurisy of adults and fifty per cent. of the same affection in children.

2. Empyema from the streptococcus. This is the common microbe of suppuration.

3. Empyema from the bacillus tuberculosis.

4. Empyema due to the encapsulated bacillus of Friedländer and to the typhoid bacillus of Eberth. These forms are said to be rare.

Mixed forms include,—

1. Empyema due to the pneumococcus and the streptococcus together.

2. Empyema due to the typhoid bacillus and the streptococcus.

3. Empyema due to the bacillus tuberculosus and the streptococcus, or to the staphylococcus, or both together.

4. Putrid or gangrenous empyema. In addition to the streptococcus and the staphylococcus, the micro-organisms of putrefaction are present.

It will thus be seen that a number of competent independent observers, after carefully-conducted experiment, have arrived at practically uniform results,—namely, the demonstration of the constant presence of microbes in empyemas. It is a question whether those cases in which the pneumococcus or the bacillus tuberculosus only are found should be classed as strictly purulent collections, although the fluid may be turbid from admixture of fibrin and leucocytes. It is more in harmony with what is known of this process elsewhere to consider the purulent process to be due to the presence of pus microbes alone or to a mixed infection.

It will be, perhaps, impossible clinically to classify many of the cases that are observed, but this does not seriously modify the treatment which should be instituted. The previous history will, of course, have an important bearing in many instances. If we know, for example, that an attack of pneumonia, influenza, or typhoid fever has preceded the pleurisy, and if there is no other cause to explain its presence, an etiological relation may be inferred, or if the patient is known to have previously suffered from pulmonary tuberculosis, it is reasonable to suppose that the case is of this nature.

The symptoms of purulent pleurisy may develop suddenly, but more frequently the onset is insidious, in which case the pleural collection is very apt to be overlooked unless this possibility is borne in mind. There is, however, usually fever of an irregular type, pain in the chest, cough, and dyspnœa on exertion, although any or all of these may be wanting.

The diagnosis is to be made by eliciting the usual signs of fluid in the chest and deter-

mining the character of the fluid by the exploring-needle. It must be borne in mind that the physical signs, like the symptoms, may be obscure, but by a careful examination of the chest a mistake will be infrequent. This, of course, is always to be confirmed by hypodermic puncture.

An empyema may terminate in spontaneous cure by absorption of the fluid, in perforation of the lung and expectoration of the collection, or by perforation of the chest-wall. This termination is very rare, however, and the condition, if unrelieved, tends to a fatal issue.

Treatment.—The presence of pus in the pleural cavity having been detected, the use of drugs is not to be considered, except in so far as is made necessary by the general condition of the patient.

The different methods of operating for the relief of this condition have been classified by Steele as follows:

1. Aspiration.
2. Aspiration and antiseptic irrigation.
3. Thoracocentesis with trocar and canula.
4. Thoracocentesis, with subsequent drainage.
5. Simple incision.
6. Incision and drainage.
7. Incision, with through-and-through drainage, with or without the addition of antiseptic measures.
8. Subperiosteal resection of a rib and drainage.
9. Thoracoplasty (Estlander's operation).
10. Perflation.

A pleural effusion having been recognized, if of recent formation, and if the patient's strength be good, careful aspiration with aseptic precautions may be done. If the effusion is one of long standing, and if the patient's condition is one of hectic, showing that the blood is already poisoned from absorption, then free drainage must be at once instituted. If the needles used in the aspiration are surgically clean, it need not be feared that on account of the puncture, if the fluid reaccumulates, it will assume a more unfavorable character than before. Should the accumulation return, then a more radical operation becomes necessary for its relief.

A review of the literature of the subject impresses one with the marked diversity of opinion still existing in the profession regarding the relative merits of the several procedures enumerated. For example, Immermann (*Deutsche Med. Woch.*, 1887) advocates simple aspiration, and objects to costal resection on account of the resulting deformity. He considers Bülau's siphon drainage, or aspiration drainage, the ideal treatment. This method is also highly endorsed by Powel, Curschmann, Runneburg, and others.

Steele, on the other hand, has collected one hundred and twenty-one cases treated by aspiration (*Journal of the American Medical Association*, 1888). Of these, but twenty-three (nineteen per cent.) were cured, six died, and the balance were sooner or later subjected to a more radical treatment, usually incision.

Mader, Rogée, Rochelt, and Williams have devised special valvular tubes, which are intended, when introduced in the chest-wall, to allow the escape of fluid from the pleural cavity, but to prevent the entrance of air. In all of these methods the dominant idea is to withdraw the fluid without allowing the ingress of any air into the pleural sac.

Even conservative writers generally concede, however, that when the chest contains pus, nothing short of thoracotomy will suffice to meet the indications present. The operation is a simple one, and may be performed quickly and safely, barring the danger which may attend the rapid withdrawal of a large collection of fluid from the pleural cavity. No attempt need be made to prevent the entrance of air within the chest. The results of this operation have been very good, as is attested by many reported cases. For instance, Griffith (*British Medical Journal*, 1887) reports fifty cases treated by this method. Of these, thirty-five recovered, five were discharged with sinuses still open, and six died, three from already advanced phthisis.

Owing to difficulty in securing free drainage by simple incision, frequently on account of the close proximity of adjacent ribs, costal resection to accomplish this object has been advised and practised by a large number of surgeons. This allows of very free drainage and, if need be, intrathoracic exploration, without adding anything to the dangers of simple thoracotomy. The results obtained by costal resection are much better than by the other methods described. As an example of the utility of this operation the experience of Holsti may be quoted. This author reports (*London Medical Record*, 1887) twenty-seven cases of empyema operated on by excising a portion of one rib, followed by the introduction of two drainage-tubes; of these, twenty-four recovered, two were discharged with a fistula, and one was under treatment at the time of making the report. Among others who employ this method may be mentioned Schede, Pel, and König.

Finally, Estlander advocated the resection

of portions of several contiguous ribs. This method is especially applicable to those chronic cases in which the lung has little or no tendency to expand after the withdrawal of the fluid. Many cases are reported which attest the value of this operation. The object aimed at in Estlander's thoracoplasty is, by removing portions of several ribs, to allow the chest-wall to retract to meet the more or less collapsed lung, and, by the formation of adhesions, to secure obliteration of the pleural cavity. To be successful, a sufficient number of ribs should be resected to accomplish the desired result. Böckel reports a case in which he removed portions of seven ribs and part of the scapula; the patient recovered and improved in health. He says that want of success in this operation is due to too great timidity on the part of the surgeon.

Richelot and Moreau, following Quenu, have performed section of the ribs, without removing any portion, to secure the sinking in of the chest-wall, as follows Estlander's operation. It would not appear that this method possessed any advantage over the latter, while it must be less certain in its beneficial effects.

The position of the opening is a matter upon which most authors lay considerable stress. Sutherland (*Lancet*, London, January 27, 1894) differs from this view, and states that the selection of the point for the introduction of the drainage-tube may be made quite apart from any considerations of drainage. The emptying of the pleural cavity, he contends, is not due to the action of gravity, but to the forcible expulsion of the fluid by the expansion of the lung and the pushing up of the diaphragm. If these are secured, he says, the fluid will be driven out irrespectively of the position of the opening, and such arrangements as a dependent opening or two openings are quite unnecessary. There will usually be no contraindication, however, to opening at a low point, and we believe that this plan will be followed more uniformly by good results.

The other methods of treatment mentioned have nothing to recommend them and need not be further considered.

That no one operation will be uniformly indicated in every case of empyema will be accepted without argument, but a tendency towards overdue conservation has certainly existed. The safety of a patient does not always lie in doing the least that is possible. We know that with imperfect drainage in empyemas, as in all other collections, sinuses remain indefinitely and continue to secrete pus, thus exposing the patient to the danger of amyloid degeneration of the viscera. It may be put down as established, that in those cases in which sinuses persist, the drainage has been imperfect. Osler ("Practice of Medicine," 1892) pertinently says, "It is sad to think of the number of lives which are sacrificed annually by the failure to recognize that empyema should be treated as an ordinary abscess, by free incision." Such a commentary from so distinguished an authority should awaken both physicians and surgeons to a proper appreciation of the necessity for early and free drainage. Another common error results from the mistaken conception of "free drainage." It is a not infrequent experience to see cases in which, in spite of alleged free drainage, improvement is not observed, and upon investigation it is found that the drainage *did not drain*. There are few affections in which surgery can claim greater success than in empyema. It is not uncommon to observe a patient pale and exhausted by his long illness, with cough, irregular fever, clammy sweats, and lost appetite, become free from fever and sweats, and regain his appetite, color, and strength after having properly drained a long pent-up empyema. That operation is, therefore, indicated which will give the freest exit to the purulent collection. Küster employs the following method: Following exploratory puncture, an incision is made in the fourth or fifth interspace, anteriorly; a silver sound is introduced through the opening and carried to the deepest part of the pleural sac, posteriorly. The point of the sound is pressed against the chest-wall until it can be felt in an intercostal space, when the rib above is resected. A long drainage-tube is passed through both openings, and the chest-cavity washed with a weak salicylated water.

It is desirable to remove the drainage-tube as soon as can be safely done, in order to secure the healing of the external wound and the expansion of the lung. To promote the latter, during the entire course of treatment and for a considerable period thereafter pulmonary gymnastics should be systematically carried out. This may be conveniently done by making forcible straining efforts, whereby the air in the healthy lung is forced into and expands its fellow. The same object is very well accomplished by having the patient force water by expiratory efforts from one bottle to another, the bottles being arranged after the manner of Wolff's bottle.

Küster's plan is probably unnecessarily heroic, although, if the patient's strength were not too far exhausted, no harm would come

from the second opening. This plan has not been adopted, however, in the cases recorded, but care has always been taken to establish the freest drainage. The operation is equally indicated in both extremes of life and the presence of fever is not a contraindication.

The question of irrigating the pleural cavity after the operation has been the subject of much discussion. It has been our practice to irrigate the pleura until the fluid came away clear; no harm has seemed to us to follow this procedure. Cases are recorded, however, in which sudden collapse or convulsions have occurred during the irrigation. Bowditch strongly objects to irrigation in empyema: first, because it is unnecessary, in his opinion; and, second, because it is not free from danger. He says that he has only once thought it necessary to irrigate in three hundred and ninety-nine operations. De Cérenville, Runeberg, Robertson, Basel, and Bonberet hold the same opinion.

The following technique for resection of the ribs seems to us to best meet the indications:

1. The portion of the rib selected for removal should be that between its angle and sternal attachment. Posterior to this it is more immovable and situated so closely to the adjoining ribs that the difficulties of the operation are greatly increased.

2. Those ribs between the third and the tenth should be selected which most accurately overlie the cavity.

3. The number of ribs operated upon should be proportionate to the extent of the cavity.

4. The length of the pieces excised should be proportionate to the depth of the cavity.

5. The operation should be done aseptically and subperiosteally, and when so performed is almost without danger; and even in cases where large portions of ribs are removed is followed by no permanent loss of function in the external respiratory muscles of that side.

It should be unnecessary at this time to insist upon the usual antiseptic details employed in modern surgery. Without this precaution the character of the discharge is apt to be unfavorably influenced by the entrance of other micro-organisms than those already present.

The ribs may be exposed by an incision parallel with and upon the rib, but it is less satisfactory than the method of making a curved incision exposing the portion of rib to be excised. This incision is the more desirable when portions of two or more ribs are to be removed, as it obviates the necessity of making multiple incisions. The periosteum is to be separated from the rib by the ordinary elevator, and by keeping the latter close to the under surface of the rib the intercostal artery may be separated with the periosteum and thus escape injury.

Free drainage is best obtained by introducing the ordinary pure rubber drainage-tube, which should, however, be of ample size. Some method must be employed to prevent the escape of the tube in the pleural cavity, where its subsequent detection and removal would be difficult, while the presence of the tube in the chest would keep up the very condition which its original employment was intended to relieve. A satisfactory method for retaining the tube is to stitch it to the margin of the wound. Another method consists in using a flat disk of hard rubber, with a hole in the centre corresponding in size with the calibre of the rubber tube, one end of which may be split into three or four portions, which are to be stitched to holes in the disk. The drainage-tube should be covered over with a liberal dressing of iodoform gauze or other antiseptic material. The subsequent treatment should consist in changing the dressing as frequently as necessary, and where there are no contraindications we believe it desirable to irrigate the cavity at each dressing. For this purpose a saturated solution of boric acid is perhaps the best. If the fluid is of a pronounced purulent character, the use of hydrogen peroxide in full strength or diluted will be beneficial. It should not be employed, however, if the opening in the chest is not large enough to give free exit to the gas which is formed, otherwise it is possible that a sufficient degree of pressure might be caused to interfere somewhat with respiration and circulation.

Attention should also be given to the general health of the patient. A sufficient quantity of easily-digested food should be administered. The hypophosphites, cod-liver oil, iron, and arsenic may one or more be indicated. An out-of-door atmosphere and the direct rays of the sun are also important.

The question of the removal of the tube is frequently difficult to decide; the general rule is, however, to gradually shorten it as the cavity contracts.

The only contraindications to costal resection would appear to be advanced pulmonary phthisis or an empyema complicating a general pyæmic state.

Age has no bearing on the indications of the operation. Cases are reported which have been successfully operated upon in the first year of life, and the same is true of advanced years; in both instances the presence of retained pus

is a more serious condition than the effects of the operation.

The following cases have been selected from those occurring in Dr. White's practice:

CASE I.—*Empyema; Incision; Imperfect Drainage; Resection of One Inch of the Fifth and Sixth Ribs; Recovery.*—C. M., aged fifty-three years, farmer, gave the following history: Eighteen months previously, following the influenza, the patient had pleuro-pneumonia, which confined him to bed for three months. During this time and for about a year subsequently he had persistent loose cough with considerable expectoration. About a year after the beginning of the present illness the patient complained of pain on the right side on coughing, and soon afterwards an abscess appeared between the seventh and eighth ribs of that side. This was incised and a large quantity of pus evacuated, with almost complete relief of the cough. The discharge continued to be quite free, and during the past few weeks the cough has again increased in severity. The patient has lost fifteen or twenty pounds in the past year. Nothing in the family history had any bearing in the case. The patient had never been strong.

As there was evidently imperfect drainage, it was decided to resect portions of the fifth and sixth ribs in the anterior axillary line. For this purpose a horseshoe-shaped incision, with the base upward, was made, exposing these two ribs, and about one inch of each was removed subperiosteally. On incising the pleura, about a pint of pus was evacuated. The cavity was freely washed out with warm boric-acid solution, a large drainage-tube introduced and secured by stitching to the skin incision, the margins of which were approximated, and a liberal antiseptic dressing was applied. During the next week the cavity was syringed out three times daily with warm boric-acid solution. The patient was up in a chair on the sixth day, and walking about on the eighth day. There was at this time very little discharge, the cavity being now irrigated but once daily. The cavity gradually contracted, the patient's health improved, and by the seventeenth day the chest would hold but two-fifths as much as it did immediately after operation. In this condition the patient returned to his home under the care of his physician.

CASE II.—*Empyema; Costal Resection; Recovery.*—V. E., aged twenty-five years, came to the hospital on account of pain in the right side of the chest, and dyspnœa. There was nothing in the family history or in the personal history of the patient which had any bearing on the present illness. The first symptom was noticed a year ago, with pain in the right chest, dyspnœa, and cough. Inspection showed the right chest to be distended and motionless and the intercostal spaces bulging; as drugs failed to reduce the effusion, the chest was aspirated eleven times; at first the fluid was clear, but at the fifth aspiration it was turbid, and at the subsequent tappings was distinctly purulent. During all this time the patient had fever of an irregular type, cough, and dyspnœa; he was confined to bed much of the time, but was usually able to get about for a short time after each tapping. In this condition he was brought for operation. Upon inspection the right side of the chest was seen to be bulging, the intercostal spaces obliterated, and there was a tendency to pointing in the seventh interspace in the mid-axillary line. Percussion gave a flat note and the overlying skin was œdematous.

A curved incision with the base upward and the lower part corresponding with the seventh interspace was made in the axillary line and an inch and a half of the seventh rib was resected subperiosteally. About one hundred ounces of purulent fluid were evacuated. The cavity was irrigated with sublimate solution (1 to 20,000), a large drainage-tube inserted, and the wound closed with sutures; a liberal dressing of antiseptic gauze was applied. On the fourth day the patient was allowed to sit up, the appetite was good, strength improved, and recovery was in every way satisfactory.

CASE III.—*Empyema; Estlander's Operation; Recovery.*—F. S., aged twenty years, came to the hospital on account of an old empyema which had lasted four years. The patient suffered from an attack of pneumonia twelve years ago, from which he had evidently entirely recovered. Four years ago he had a second attack of pneumonia, following which empyema developed. The chest was aspirated and a large quantity of purulent fluid was withdrawn; the collection rapidly reformed, and a second aspiration was performed. As the fluid reaccumulated a small drainage-tube was introduced and allowed to remain for five or six weeks. At the end of this time it was withdrawn and the external opening closed. It was necessary a year later to reopen the wound and introduce another drainage-tube; this tube disappeared, and it was thought entered the pleural cavity. Another tube was put in its place, which had been retained up to the time he came under Dr. White's care; a constant discharge had kept up. It was decided to perform Estlander's operation in order to secure the heal-

ing of the cavity. Portions of the sixth, seventh, eighth, and ninth ribs were resected. A careful search for the missing tube with the finger failed to disclose it; the cavity was then irrigated with sublimate solution (1 to 20,000) and packed with strips of iodoform gauze; the wound was then covered by a thick dressing of antiseptic gauze. The patient bore the operation well. The packing was removed on the second day after the operation. There was a large collection of fetid pus, and with this a portion of drainage-tube six inches in length was discharged. This was curled up in a round mass and held in this position by lymph. The tube had probably been encapsulated, and the packing had caused this to break down, which resulted in the discharge of the tube. The convalescence of the patient was rapid and satisfactory. The lung gradually expanded, and at the end of two weeks had nearly filled the cavity of the chest on that side. At the end of a month the cavity was so small that a tube could no longer be introduced, and the second incision was, therefore, kept open by a tent of iodoform gauze; the patient at this time was going out every day. A week later he was discharged, having entirely regained his health and the wound completely healed to the level of the surface, and requiring but a few more days for cicatrization.

CASE IV.—*Empyema; Estlander's Operation; Recovery.*—F. M., aged thirty-three years, was suffering from a large empyema which filled the whole left side of the chest, for which it was decided to resect portions of the fifth, sixth, and seventh ribs, which was done through a large horseshoe-shaped flap. Two inches were removed from the fifth rib, two and a half inches from the sixth rib, and three inches from the seventh rib. The subsequent treatment was the same as in the other cases. The health and strength of the patient rapidly improved and the cavity diminished in size; but, owing to the impossibility of control of the patient, a sinus persisted, which, however, did not interfere in any way with the usual occupation. Death occurred two and a half years later from an acute intestinal affection.

CASE V.—*Empyema; Costal Resection; Recovery.*—R. S., aged twenty-one years, was suffering from a large empyema which had followed a pneumonia. After it was found that the medicinal treatment would not induce the absorption of the fluid, the chest was aspirated. The accumulation rapidly recurred, and as the condition of the patient was becoming one of hectic, the necessity for securing free drainage was imperative. To secure this it was deemed necessary to remove portions of the sixth and seventh ribs. A large quantity of fluid was evacuated, and free drainage established by means of the rubber tube. The improvement in the general condition of the patient was immediate and progressive. The task of transferring water from one bottle to another by means of blowing through a tube which perforated a cork accurately adjusted to the mouth of the bottle was begun early; the drainage-tube was removed in the fourth week, when a small tent of iodoform gauze was used in the external opening until the cavity became obliterated.

THE UTILITY OF AMPUTATIONS NEAR THE ANKLE.

CASES EXHIBITED AT THE MEETING OF THE PENNSYLVANIA STATE MEDICAL SOCIETY AT PHILADELPHIA, MAY 16, 1894.

BY GWILYM G. DAVIS, M.D., M.R.C.S.,
Surgeon to the German and St. Joseph's Hospitals.

IN 1889, before the Philadelphia County Medical Society, Dr. Mordecai Price, of this city, advocated the abandonment of all amputations near the ankle-joint, and substituting therefor amputation below the knee.

In his address on surgery before this Society in 1891, Dr. Allis also advocated the same procedure.

In 1892, Dr. Price again brought up the subject, and now at this meeting he once more presents a paper advocating the same procedure.

These gentlemen are not alone.

Dr. Buntz (*Medical News* February, 1894), Professor of Surgery in the Wooster University, Cleveland, Ohio, has lately written in the same strain, as has also Mr. Truax, an instrument-maker of Chicago.

Dr. Mordecai Price has been most outspoken and it was on account of his proposing again to read a paper on the subject before this meeting that I was induced to collect some cases which it was thought might throw some light on it. I have simply gathered such as I could without any intention of showing extraordinary results.

The continuous onslaught which has been made on amputations through the foot and lower part of the leg is producing its effect on some surgeons and causing them more often to amputate at the higher point.

The objections alleged against them are:

1. The uncertainty of obtaining useful stumps. 2. That the mechanical appliances are awkward and unsatisfactory.

3. Reamputations are necessary before an artificial limb can be worn.

4. That the disfigurement is so great that it produces a bad effect on the mind and *morâle* of the patient.

I had collected ten cases, which it was proposed showing; five were Chopart and five were Pirogoff amputations. Three of the cases were operated on late last summer and last fall. One was a double amputation, one operation being at the seat of election on the leg and the other a Pirogoff; another case was a Chopart, and the third a Pirogoff.

Two cases illustrated the usefulness of the Chopart amputation even when no apparatus was worn. One patient, whom I now show you, had a Chopart amputation performed thirteen years ago, since which time he has worn a shoe made by an ordinary country shoemaker. He is fifty-two years of age, and has never had the slightest trouble with his foot, nor been compelled to lay up a single day on account of it. He is a lumberman by trade, and has been employed continuously at hard laboring work.

The other case—which has disappointed me—is a boy aged seventeen years, on whom I did a Chopart amputation eight months ago. Healing occurred by primary union, and he walked almost immediately, and has since used a common shoe. He has a very slight limp and can walk as fast as he ever did. He is an extremely bad character, and is now what he terms "on the bum,"—that is, he is a professional tramp. What better use could these two cases have had of their limbs if the amputation had been done below the knee?

Three other cases were intended to show the utility of an artificial foot in Chopart amputations. One was a wealthy business-man, whom I was unable to induce to come. He has worn with satisfaction an artificial foot for years. A second is a gate-tender on a railroad, and he has failed to appear. He also wears an apparatus, and is on and off his feet all day and walks very well. The third, the gentleman I now show you, walks, as you see, with almost no limp, and on looking at his feet as he walks it is absolutely impossible to tell which is the affected foot; it is only when his pantaloons are raised sufficiently to see the lacings around the ankle and leg that anything unusual is to be observed. In what way the condition of either of these three cases would be improved by an amputation through the leg, I am utterly unable to see. This last case was one of Dr. John B. Deaver's, my colleague at the German Hospital, and he is wearing an appliance made by D. W. Kolbe & Son, of this city.

I had five cases of Pirogoff amputations, two of whom are present. Two were intended to illustrate the usefulness of the limb when no special apparatus is worn. One is a boy aged sixteen, who is walking around in a small circular leather boot, laced on the stump two or three inches above the ankle, and resting his whole weight on the extremity of the stump on a pad placed in the boot; he has absolutely no pain. The second is a man who is out of work, and is wearing a home-made device until he is able to pay for the apparatus which I here show you. It was made by D. W. Kolbe & Son, and has a socket below for the stump and leather above, which is laced around the calf; it has an ankle-joint and toe-joint. This man has already worn an apparatus like this with perfect satisfaction, and now the one I show is a new one, which has just been completed. A third case I missed owing to not keeping an appointment I had with him. He stopped in at the instrument-maker's, and had his apparatus, similar to the one shown you, put in perfect order, and departed forthwith to Massillon, Ohio, where he joined Coxey's army on its tramp towards Washington. What better evidence could there be of the usefulness both of the operation and the apparatus?

Of the remaining two cases I here show, the first was done by Dr. Deaver at the German Hospital about two years ago. He is a watchman in a large station. He wears an apparatus, and walks, as you see, with a slight limp. He says at times it is not at all noticeable, as it depends on how he feels, and especially as to how the apparatus is laced on. If it is laced firm and straight, then he walks without limping, but if it is loose or slightly twisted, then he limps slightly. Although the amputation was done over two years ago, he has never lost any time, and is positive in his preference of a Pirogoff to an amputation through the leg. He has come in contact with others who have lost their legs by an amputation below the knee, and he thinks they have more pain and discomfort and loss of time than he has had. He patrols a building over a hundred yards long (one square), going completely over it every hour.

The last case is one of double amputation for railroad crush, which I performed last September at the German Hospital. One leg is amputated below the knee and the other is a Pirogoff amputation. He has been wearing the legs only one month, and has not yet gotten thoroughly used to them, and therefore uses a

cane. As is seen, he walks well for one in his condition, and on looking at the feet there is absolutely no visible difference between them. One apparatus looks just as well as the other. On asking him which limb he prefers, he says the one on which the Pirogoff amputation through the foot was performed. The reason is that he feels more secure on it and has greater control over it than over the other. It also feels better, because there is no lacing around the thigh to constrict and chafe him. When standing on his leg amputation, he has to be careful to keep it stiff, or he is apt to lose his balance, while with his foot amputation there is no such tendency. The reason of this is easily seen when we consider the point of support in the former case is eighteen or more inches from the ground, while in the Pirogoff it is only two or three. This case I certainly think is a fair test of the value of the two procedures. The patient is a man of two hundred and twenty pounds weight, and has had experience with both methods, and you have heard him state his preference for the Pirogoff or foot amputation.

It is not claimed that these few cases will settle the question as to which position it is more desirable to amputate, but a constant following of hospital surgical practice for the past fifteen years has failed to convince me that there is any reason sufficient to justify a resort to amputation at the seat of election below the knee when there is sufficient tissue left to perform a proper Chopart or Pirogoff amputation, and this whether, as in two of the cases shown, the patients are in the humbler walks of life, or whether, as in the other two, they are in more affluent circumstances.

Dr. McCurdy, of Dennison, Ohio, has recently stated that he has excellent results from Syme's amputation, and prefers it to the Pirogoff. Of this I have as yet formed no opinion, but I know I can get good results from the Pirogoff, both as regards the use of the limb and as regards cosmetic effects. In performing it, however, as much of the lower ends of the leg bones and as much of the calcaneum as possible should be removed, so that the limb will be shortened enough to enable the instrument-maker to make use of a cylindrical joint beneath the stump and prevent the tension on the tendo Achillis from drawing the fragment attached to it out of place before it has properly united to the tibia. Even if, as Truax asserts, the percentage of those unable to wear artificial appliances in amputations of the leg and foot is as four to fourteen, I still think that the ten per cent. difference does not justify a resort to the higher amputation. When in amputations an end-bearing stump can be secured, as in these cases, then I believe it ought to be chosen, because, if it be desired, the support derived from lacing the limb above can still be used and the weight shifted from one place to the other at the will of the patient. Satisfactory appliances for these amputations can be secured, which do aid in walking and in rendering the deformity less noticeable.

255 South Sixteenth Street.

AMPUTATIONS AND MECHANICAL RESTORATIONS.

By Edwin Osborne, M.D., Philadelphia, Pa.

THE interests of surgery and of the appliances that promote the success of its operations, in the artificial restoration of the lost parts of the human body, are so entirely identical that a few words on the requirements of the latter seem particularly appropriate in a journal of this kind.

The inquiry is often made as to the best point of amputation for the perfect adaptation of the artificial leg.

The choice is not always in the surgeon's hands. In olden times it was customary to amputate, when the injury was below the knee, at the upper third of the leg, with the view of flexing the knee-joint and resting the weight of the body on the knee on the then generally used peg leg. If the injury was at or near the knee, then, when possible, at the lower third of the femur, as giving the best stump or one most easily fitted to the conical socket which would support the necessary pressure on the walls of the stump in walking. In these days, however, the peg leg is rarely seen, and the mutilation is not so palpably advertised. With the advances in the art of constructing artificial legs, new ideas in surgery prevail.

The writer's experience of over forty years in the adaptation of artificial legs to thousands of amputations of every conceivable kind warrants him in thinking that his views may be of interest to the surgeon who, in the exercise of his great calling, has the future comfort of his patient in mind as well as his present relief.

It is certainly safe to say that one cannot have too much of the natural leg. It is the lever that controls the artificial part, and the longer the lever the better the walking results.

Very long stumps are much more difficult to treat, but in competent hands the mechanism can always be skilfully adapted to the amputation. The welfare of the patient is the first

consideration, rather than the convenience of the leg-maker. In the application of the artificial leg the weight of the body must be supported about the amputated leg, consequently anything that facilitates its comfortable adaptation is a great boon to the patient. In all amputations an abundant flap is a great help, for the reason that in taking the pressure about the stump there is more or less tension of the flesh over the end, and if the flap is meagre irritation is likely to follow. It has been the writer's practice for many years, in all cases when practicable, to support some weight on the end of the stump. In many cases, upon a suitable rest, a very considerable pressure can be borne with positive comfort. It relieves the side pressure and the wedging sensation of the support in the tapering socket.

Any amputation that admits of what may be called a natural base of support possesses great advantages. The Chopart operation, where alone the heel is retained, gives a perfect support. The treatment is difficult because of the extreme length, but by practically lengthening the sound leg by means of a higher heel on the shoe, a good result is attainable. The Pirogoff also admits of a perfect support and has this important advantage, it shortens the leg considerably, thus giving ample room for the foot and its mechanism. The Syme operation gives equal advantages.

When necessary to amputate above the ankle, save all that can be saved; for although a very long stump is more difficult of fitting, still, the benefits counterbalance the difficulties. In amputations below the knee it is desirable to have the fibula somewhat shorter than the tibia; it makes a rounder end to the stump, and one very much less sensitive to pressure.

A stump of less than two and a half or three inches in length, reckoning from the lower edge of the patella, is rather too short for the comfortable use of the natural knee, but it can be flexed and the weight borne on the knee, making the knee-bearing leg the most comfortable of all the artificial legs.

Save the knee-joint always when possible, for no matter how short the stump may be flexed, it gives the best possible support and the longest thigh leverage for the control of the artificial knee-joint and leg. When the knee cannot be saved, then the amputation through the joint is the next best.

This amputation has not generally met with much favor from leg-makers, because it requires the highest skill in its treatment. When it is simply disarticulated, covered with a meagre flap, with condyles prominent and patella slipped a couple of inches from the end, it is about the most trying case one can encounter. But if a considerable portion of the condyles is removed and the patella made to adhere to the end, rounding the stump and protecting the remaining condyles, then, with a good flap, it is an operation of great merit. It gives an excellent base of support, and, though still difficult, can be admirably treated. Above this point, of course, save everything possible.

THE USE OF STRYCHNINE IN SNAKE-BITE.

By Dr. Macher, Yarkandandah, Victoria,
translated by
H. H. Behr, M.D., Berkeley, Cal.

BY the request of Baron von Müller, I have the pleasure to communicate to you a complete exposition of my theory and treatment of poisonous snake-bites. From the beginning our mutual friend recognized the importance of my investigations in this matter, and endorsed my statements when they were ignored by other scientists. He also secured for me the honor of the discovery when afterwards the results of my method became generally known. As an introduction, I say a few words about the history of my discovery.

I have now been thirty-five years in Australia, and snakes always had for me a peculiar kind of interest, because, in the very beginning of my medical career in Australia, I almost succumbed to the bite of a tiger-snake (*Hoplocephalus curtus*). As a natural consequence of this accident, I read up the literature on this subject, but derived from this material so little satisfaction that I made up my mind to restrict myself entirely to my own experiences. I had ample opportunities to do so. I like the free life in the "bush" and am a passionate hunter. So I came in frequent contact with my interesting friends, and witnessed the effects of their insidious weapon on men as well as on most domesticated animals.

I soon observed that most of the symptoms could be reduced to functional disturbances of the nervous centres, but for many years I pondered over the question, Are these disturbances direct and primary, or are they produced by decomposition of the blood, occurring at the same time? My own sensations, especially the development of these sensations immediately after the bite, caused me to consider the disturbances of the nervous system to be primary. There was less difficulty in settling the question, Does the paralytic effect of the

poison extend contemporaneously to motory and sensory nerve-cells? My observations lead me to consider the motory cells to be first affected and after them the sensory cells. Some of my hunting-dogs which were bitten on different occasions still showed sensations in the hind legs when they would no longer respond. In the same way, patients of mine who had been bitten without being conscious of it, noticed their state only when they were not able to walk. This symptom had been the first in my own case also; so it was not difficult for me to localize the effects of the poison primarily in the anterior column of the spinal marrow. It was clear, too, that the symptoms, ascending from that point, spread over the entire motory sphere and reached the gray substance of the cortex cerebri. A careful analysis of the symptoms, which with us in all dangerous cases culminate in coma and loss of sensation, supported this theory. The weak action of the heart and the diminution of blood-pressure, fainting, præcordial anxiety, etc., indicated at the same time debility of the vaso-motor centres.

But now, what caused the swelling, extravasations, sloughing in the bitten part, the destruction of the blood-corpuscles, and the dark, not coagulable, quality of the blood?

If my theory were correct, it had to explain these symptoms also.

Unfortunately, science knows little about the consequence of a paralysis of the vaso-motors. At the same time the circumstance escaped my memory during these studies that there exist diminutive ganglia at the ends of vaso-motoric nerves, which evidently regulate the circulation in the capillary system.

These doubts brought it about that years passed by before I ventured to publish my theory. The phantom of blood-poisoning always appeared before my eyes whenever I seriously thought to give my theory to the public or prove it by practical application.

If my theory were correct, strychnine, beyond doubt, was the physiological antidote.

At length, in 1887, I was compelled, in an apparently hopeless case of poisonous snake-bite, to try it. From a long and painful experience I knew my perfect helplessness with regard to the usual antidotes,—ammonium, permanganate of potassium, and alcohol. My patient, a boy of fifteen, was cold, without pulse, and comatose. He had to die at any rate. I therefore resolved upon a daring and energetic application of the theoretical antidote, as I reasoned that it finally amounted to the same thing if the boy died by strychnine or by snake-poison. There was *periculum in mora*, and so I injected subcutaneously in a short space of time as much as ⅓ grain. The result was a brilliant triumph of science, to witness which it was worth while to have lived.

The pulse returned, the face lost its deadly pallor, the patient, before motionless, began to move and to sigh. Another injection of $\frac{1}{12}$ grain, and he threw himself about as in sleep.

Then I seized him by both shoulders, and, shaking him violently, I called him by name. He opened his eyes, rubbed them like one being awakened from heavy sleep, and looked with astonishment at the persons present. He was in his perfect senses, and in less than an hour he sat at my table eating and drinking, as if nothing had happened.

So the mystery of snake-poison was solved and the correctness of my theory entirely proved.

I was perfectly happy, and kept the boy for several hours under my observation, because the pallor did not yield entirely and the reaction of the pupils of his eyes was but tardy. I administered a full dose of alcohol, but without apparent effect. I did not risk to go beyond ⅓ grain of the antidote, notwithstanding the absence of the slightest twitching of the muscles. His state of health did not change, and so I yielded finally to his entreaties to let him go home. Nevertheless, I gave positive instructions to his mother not to allow him to fall asleep, and to call me immediately as soon as any change in his state should take place. But the mother, an ignorant Irishwoman, unfortunately allowed herself to fall asleep; the boy, too, fell asleep, and during his sleep was seized with coma. When the mother discovered it in the morning, she sent for me immediately; but this time the boy died before my arrival. Later experiences have demonstrated that a single injection would have been sufficient to neutralize the remaining power of the poison and would have saved the boy. Since then I made it my rule to continue the injections until the development of slight muscular twitchings; but even then I do not allow the patient to sleep during the first night, and I am now perfectly master of the poison. The poison frequently causes récidives in violent cases, which always have to be conquered by strychnine. The quantity needed for this purpose need not be considered, because the antagonism of the two poisons is so perfect that the specific symptoms of strychnine do not develop before the lethargy and paralysis of the nerve-cells and the influence of snake-poison have been perfectly conquered. In a few cases

I have witnessed tetanic spasms, but they passed quickly, without doing any harm.

This treatment is so simple that it has been successfully administered by intelligent people who were without any medical education.

In bad cases we inject 16 minims of the liquor strych. (P. B.), and if the patient, after the injection, does not visibly improve, we repeat the same injection after fifteen minutes; then we continue with injections of 8 minims about every fifteen minutes until all the symptoms have disappeared, or until the strychnine begins to develop its physiological effects.

There are many cases when even smaller doses of the antidote have proved to be efficient. In the worst cases $\frac{1}{5}$ to $\frac{1}{3}$ grain have been necessary.

At present no sensible medical man doubts any longer the correctness of my method, and public opinion is so outspoken in my favor that a fatal case of snake-bite treated by any other method probably would have as a consequence the trial and punishment of the implicated medical man. There is no doubt that the value of the discovery will be recognized in other parts of the world as well, because snake-poison everywhere attacks the same organ, however different the symptoms may appear at first sight. Paresis and paralysis of the motoric centres is always evident, the only difference being a certain predilection for certain spheres, —viz., the poison of the cobra (*naja*) having a predilection for the respiratory centres, the glosso-pharyngeus, etc.; the poison of the viper (*Vipera Russelii*) for the vaso-motoric centres, etc.

Fayrer, Richards, Mitchell, and others pretend that the poison of the viperinæ is a pure blood-poison, and essentially different from the poison of the elapidæ; but this theory has been fundamentally refuted by the fact that poisoning by the deaf adder (*Acanthophis antarcticus*) is as speedily cured by strychnine as the bite of our deadly pseudedis, prendonaja, hoplocephalus, etc., without any remaining symptoms of blood-poisoning.

The theory is very simple; but this very simplicity, in contrast with the predominating confusion of ideas, may have been one of the reasons why some of our professors were so slow in adopting my theory.

The great Kobert mentioned it rather unfavorably in *Schmidt's Jahrbücher*, until, finally conquered by undeniable facts, he was compelled to recognize my merit, but he did so with the remark that there was not anything so remarkable in the discovery, the poison of our snakes being analogous to the effects of chloral, and strychnine being recommended in overdoses of chloral.

The publication in 1887 of my theory was rather disagreeable for Kobert, because he had experimented for many years with the poison of snakes and spiders, and had arrived at the same conclusions which I published. Feo Klistow communicated, in a dissertation written with the co-operation of Kobert, the results of more than two hundred experiments, which proved the correctness of my theory as to the most minute details. It was a happy circumstance that this essay was not published before the year 1888. Both scientists experimented, like me, with strychnine, but committed the error of generalizing from unsuccessful experiments with lower animals. Feo Klistow, at the end of his essay, pronounces the opinion that in the present state of science a physiological antidote against snake-poison could not even be thought of. He had no idea that at the time he was writing those lines such an antidote was discovered and already in common use at the antipodes.

You will find in the manuscript which I send you many authenticated cases to prove to your American countrymen the correctness of this important discovery, so that it will gain ground and benefit a distant country.

The following notes of three cases of snake-bite treated by subcutaneous injections of strychnine, by H. C. Garde, F.R.C.S., surgeon to the Maryborough Hospital, Queensland, are taken from the *Australasian Medical Gazette* of April, 1890:

Case I.—At about 7 A.M. on January 26, Miss H., aged thirteen years, was bitten on the outer side of the right ankle by a large brown snake. Within a minute or two a small-sized rope was wound around the leg from the ankle to above the calf, and she started on horseback for town, having to come six miles, and, being delayed in crossing the river Mary, in flood state, she did not arrive at the hospital until 9 A.M. She was then in a nervous and exhausted condition, and had some dragging of the lower limbs on trying to walk. The two punctures were plainly visible. Free incisions were made across them, and the foot placed in warm water; the parts, being congested, bled freely; pressure converging towards the wound was made to increase the flow. Next, 15 minims of the liq. strychniæ (P. B.) were injected into the subcutaneous tissues of the thigh, and five minutes afterwards the ligature was removed. As she looked like fainting, an ounce of whiskey in a little cold water was given. Ten minutes later 10 more drops of liq. strychniæ were

injected, and by 1 P.M. she felt well enough to return home.

CASE II.—On January 28 a Kanaka, aged about twenty-two years, was brought in from Jindah Plantation. He was bitten by a snake just above the ankle, and a ligature was applied at once just above the punctures and another one about three inches farther up the leg. He was unable to tell what kind of a snake had bitten him, not being able to speak English. With the exception of his not getting any whiskey, similar treatment was adopted, and he got all right in a couple of hours.

CASE III.—On February 26, W. O., aged sixteen years, was bitten by a whip-snake on the ankle. He at once tied his belt tightly around the leg above the wound. He was brought into town about an hour afterwards. The symptoms were slight,—indeed, might fairly be ascribed to fright; only one injection of 12 minims of liq. strychniæ was used; wound treated same as other two cases.

Remarks.—In all the cases the bites were situated in nearly the same position, and as none of the patients had on boots or socks, the fangs were applied to the skin direct. The brown snake is looked upon by good authorities as being the most poisonous of all the Queensland snakes. Mr. Johnstone, postmaster of this town, who has lived for over twenty years in the northern parts of this colony, and who has had considerable experience with snakes, tells me that he saw twelve people who had been bitten by brown snakes, and, as he expressed it, he "attended the funerals of the lot," while of seven cases of bites by the deaf adder four are alive at present. He had the misfortune to have been bitten himself some six months ago by a brown snake, and was treated by Dr. Bowe, of Gympie, at first with injection of liq. ammoniæ and afterwards with liq. strychniæ, to the latter of which he ascribes his recovery. I may say that his case was worse than any of the three treated by me, as he became quite insensible and had, in addition, to have artificial respiration carried on for a considerable time. He informs me that the whip-snake is not poisonous; at any rate, Case III. did not exhibit any symptoms that could not be accounted for by fright, so that he probably would have recovered whether or no.

Strychnine in Snake-Bite (from the *Australasian Medical Gazette*, April, 1891).—Through the courtesy of Dr. F. N. Manning, medical adviser to the New South Wales government, we have received a first batch of official police reports on cases of snake-bite, collected by direction of the honorable colonial secretary, from which we have extracted those cases treated with Dr. Müller's remedy, not yet reported elsewhere:

On March 10, 1891, the officer in charge of police at Murrurrundi, reports that a case of snake-bite, partially comatose, was treated by the local chemist, who injected liq. strychniæ hypodermically, and applied acid. carbolic. and liq. ammon. locally. The patient recovered.

On March 19 the officer in charge of police at Glen Innes reports the death of a woman, aged sixty, from snake-bite. *The injection of strychnine was not used*, but, he says, "everything was done to support the failing nervous system and to stimulate the heart by injections of ether, and strength was supported by alcohol, ammonia, etc.; permanganate of potassium was used locally."

On March 12, 1891, the officer in charge of police at Armidale reports that six cases of snake-bite have been treated in that district by the hypodermic injection of strychnine, of which five resulted in cure; the sixth, not having been attended to until four hours after being bitten, died.

On March 22 the officer in charge of police at Inverell reports that two cases of snake-bite were treated by Dr. Vallée, who injected strychnine hypodermically. Both made a good recovery.

We are informed that Dr. Lilie, of Moree, treated two cases of snake-bite successfully by the injection of liq. strychniæ, and Dr. L. S. Holmes, of Lanneeston, also treated a case with Dr. Müller's remedy, full reports of which we hope to publish in a future issue of this journal.

The discovery of this important antidote shares the fate of all discoveries. It is at first treated with doubt and contempt, and when the fact cannot any longer be maltreated, the old comedy of the egg of Columbus is created in a new version. It is rather tedious to look at the petty jealousies which hang round every discovery. We prefer to discuss some peculiarities of the antidote and the poison of which it is an antidote, and we now point out certain rules regarding the administration of such a dangerous antidote.

The very complete casuistics contained in the medical periodicals of Australia prove four things.

1. The strychnine acts regularly and promptly.
2. Its action stops entirely after a time.
3. The snake-poison, like the poison of fungi, of fishes, and mussels, develops irregularly.
4. It sometimes remains latent for a consid-

erable time in the system, so that when it has apparently been conquered for several hours, it suddenly may start a new course of symptoms. This tendency to remain latent in the system, which it shares with many ptomaine poisons, is probably the cause of the irregularity and slowness of its development, of which I have heard in Surabaya of a very striking instance in the case of a Dutch captain bitten by a hydrophis while bathing.

I therefore would recommend not to inject the antidote before unmistakable symptoms of the snake-poison are perceptible, as the poison may act so slowly that the patient succumbs to the strychnine before the state which requires and neutralizes its action has developed.

Secondly, to watch the patient even after the disappearance of the last symptoms for another twenty-four hours, in order to be able to combat in time that insidious sudden revival of the snake-poison to which succumbed the first-mentioned patient.

After having established the fact that strychnine is the physiological antidote of snake-poison, there rises naturally the question, Is snake-poison the physiological antidote of strychnine? Theoretically we can answer the question by "yes," but practically we have to consider the great irregularity with regard to time and intensity of the action of snake-poison.

In the administration of strychnine we can measure the dose to a nicety (a few cases of idiosyncrasy, of course, excepted), but snake-poison is unreliable and treacherous in every sense, as to time as well as to intensity. It is not only the state of the snake from which it is taken that must be taken into consideration, it is also the individual to whom it might be administered. There are few agents in which idiosyncrasy plays such a part as in the action of snake-poison. We know a number of mammalia and birds which enjoy a perfect or limited immunity from its deadly action, some species of weasel, the hedgehog, the glandarius, and, to a limited extent, the stork. There may be individuals of our own species who possess an idiosyncrasy that procures for them immunity, and then there is that insidious survival of the symptoms when all danger seems to be over.

Suppose an overdose of strychnine has been treated with snake-poison, is there any certainty that five or ten hours later the fatal action of snake-poison may not begin? There are several other questions arising from this wonderful discovery of Dr. Müller. Other discoveries may spring up, caused by the results of this first investigation, but for the present let us be thankful for the addition to our knowledge which we owe to this conscientious discoverer.

ADDRESS IN OPHTHALMOLOGY: MEDICINAL OCULAR THERAPEUTICS.

DELIVERED AT THE MEETING OF THE MEDICAL SOCIETY OF PENNSYLVANIA, HELD IN PHILADELPHIA, MAY, 1894.

BY G. E. DE SCHWEINITZ, A.M., M.D.,

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THE art of restoring health to disordered eyes naturally divides itself into (*a*) Optical Therapeutics, (*b*) Surgical Therapeutics, and (*c*) Medicinal Therapeutics. To recount the achievements in any of these departments constitutes a task worthy of the best efforts of an address in ophthalmology.

The improvements in the shadow-test, so many of which we owe to our fellow-member, Dr. Jackson, the increased accuracy in keratometry with the new model of the Javal ophthalmometer, and the designation of prisms by their angular deviation, together with the numerous useful modifications in their practical application, often the result of American ingenuity and industry, especially by Risley, Randall, Jackson, and Ziegler, are only a few of the many instances on the purely optical side of ophthalmic practice.

The surgery of the eye is always attractive on account of the nicety of its manipulations and brilliancy of its results. A profitable hour could be spent in reviewing the operations for the extraction of cataract in our day, and contrasting the successes under the simple and combined methods, or in discussing the claims of different varieties of capsulotomy and the relation of discission to ultimate visual acuity after the primary section.

Although a spirit of conservatism has marked the treatment of concomitant strabismus, the actual operative manipulations have improved, not only in so far as tenotomies are concerned, but especially in advancements, and we may instance with satisfaction among the numerous excellent methods now employed by ophthalmic surgeons the single suture operation designed and advocated by Prince, of Springfield, Ill.

It is to be regretted that the same conservative spirit has not possessed those surgeons who would have us believe they are able to correct degrees and fractions of degrees of heterophoria by picking out a few delinquent fibres from the centre of the tendon of an ocular muscle. It may be that the so-called graduated tenotomies will some time find a place among the proper

methods of ophthalmic surgery, but the evidence to-day certainly is that a healthy reaction has set against injudicious snipping of orbital tendons in the hope of curing all manner of complaints related and unrelated to muscular asthenopia.

The last year or two has been signalized by the appearance of many papers advocating various measures for the relief of obstruction in the lachrymo-nasal duct.

The free discussion of this particular branch of ophthalmic practice has resulted in a better understanding of the causes of epiphora and a classification of cases, separating those suited to pure operative interference from those which must be managed by constitutional measures, by intranasal treatment, or by local means, unassociated with the passage of instruments through the lachrymo-nasal passages. Among the ingenious methods for overcoming organic stricture mention should be made of the excellent stricturotome of Dr. Charles Hermon Thomas, of this city, and also of the clever substitution of a diseased lachrymal duct with a canula of decalcified bone, which slowly becomes incorporated with the tissues, as has been practised abroad. Finally, we note the relegation to the rear of the old-fashioned excision of the lachrymal gland for malignant epiphora, and in its place the less merciless extirpation of the palpebral portion of this structure, as particularly advocated in the French schools.

How great has been the advance in the management of trachoma! It is true that from the earliest days all manner of surgical procedures, from the most brutal and unscientific manipulations to the daintiest crushings of the granulations, have been practised, but we are particularly indebted to Knapp, as well as those who have modified his forceps, for an instrument with which, in selected cases and with the least damage to the tissues, the cure of this stubborn disease is materially hastened. Grattage and brossage, more violent methods and smacking somewhat of the older and rougher manipulations, no doubt find indications in graver varieties of chronic trachoma, but they cannot be commended with the same degree of confidence that the operation of expression, so performed as to milk the entire conjunctiva of its pathological contents, has gained for itself.

These are but a few of the topics belonging to the surgery of the eye that might be reviewed to show the progress of the last few years. Lest, however, the work of the third department of the art of healing eyes, to which reference has been made, suffer by contrast with the more brilliant results of pure optical and surgical measures, I crave your attention for a few moments to some observations on *medical* and *non-surgical ocular therapeutics*, and, first of all, to certain uses and abuses of mercury.

As long ago as 1866 injections of a solution of common salt beneath the conjunctiva were recommended by Rothmund for the purpose of absorbing corneal opacities, and, in 1889, Secondi employed similarly-placed injections of corrosive sublimate in an attempt to cure keratitis, iritis, and choroiditis. It remained for Darier, however, in 1891, to classify carefully the diseases suited to this method of administering mercury, and it is to him and other French surgeons, particularly Valude and Lagrange, that the free trial of this method has been accomplished during the past two years.

Based on the theory that a drug which is believed to be antagonistic to a morbid process should be introduced into the affected organ, and thus come in contact in a concentrated form with the lesions it is intended to antagonize, solutions of soluble salts of mercury, particularly the bichloride and cyanuret, have been subconjunctivally injected, (1) to check the infective processes, as exemplified by sloughing ulcers; (2) to neutralize a syphilitic disease, particularly when this attacks the uveal tract; and (3) to act as an antiplastic or alterative in non-specific and non-infective conditions,—for example, chronic choroiditis.

Recent ophthalmic journals have been liberally supplied with reports from France, America, Germany, Italy, and Russia, and we are in possession of sufficient data to conclude that these injections administered to proper cases are not harmful, and that they often dissipate with marked rapidity the manifestations of acquired syphilis in the iris and ciliary body. Their power in episcleritis, infective keratitis, and choroiditis is not so marked, while in the diseases of the optic nerve and retina and inherited syphilitic affections, especially interstitial keratitis, their effect is still less noticeable.

Conceding a definite value to these injections, it is yet too soon to say whether they will supersede other methods of administering mercury. With respect to this point ophthalmologists are in somewhat the same position as genito-urinary surgeons are with regard to the hypodermic introduction of this drug in the treatment of general syphilis,—a method which has recently found renewed favor in many quarters. Whether an objection urged against the latter practice, and well described by Orville Horwitz, that the results, although quickly bril-

liant, are not stable and that relapses are more frequent, weighs with equal force against these subconjunctival injections of sublimate, will be decided by a wider experience and a greater lapse of time.

In some respects subconjunctival injections are an outcome of a more audacious therapeutic measure, originally proposed and practised by Abadie in 1890,—namely, intraocular injections of corrosive sublimate,—in the hope of checking sympathetic ophthalmitis. Although occasional successes were reported, it will be remembered that the practice was abandoned in favor of the subconjunctival method, even by Abadie himself, on account of its frequent inefficiency and distinct danger. Recently certain experimental inquiries in this country and in Scotland have recalled attention, not only to the introduction of mercury directly into the vitreous chamber, but to the whole subject of intraocular therapeusis. My own experiments on rabbits seemed to show that the vitreous, choroid, and retina withstand badly intraocular injections of various antiseptic substances, with perhaps the exception of aqua chlorinata, although in one dog a suppurative hyalitis was apparently cured by injections of corrosive sublimate into the vitreous. The conclusion was reached that before accepting this method of medication, even within narrow limits, much additional knowledge was needed in regard to the exact therapeutic relation of these fluids, when introduced into the eye, to a microbic disease, and especially the relation of the chemical composition of the vitreous to that of the fluid injected. More promising results are apparent from Dr. Chasseaud's research* wrought upon exactly the same lines, and the interest in the matter is evidenced by the fact that at the next meeting of the Ophthalmological Congress in Edinburgh a special session devoted to the study of intraocular injections has been arranged. Perhaps the facts then to be brought forward will justify Mr. Berry's belief that these injections represent a distinct advance in ocular therapeusis.

Irrational routine treatment has often been responsible for grave therapeutic mistakes, and in special practice there is no better example than the abuse of mercury in the treatment of many diseases of the eye. No doubt the excellent article of Dr. Landolt† upon this subject is fresh in the minds of many of you. Perfectly willing to pay tribute to the paramount importance of mercury in the management of the numerous ocular manifestations of syphilis, he protests (and in this protest he has, I am sure, the support of all rational therapeutists) against the needless exhibition of this drug in incurable affections, or in those indicating at the same time other reasonable and efficacious treatment.

Landolt has divided his cases into three classes, which, somewhat modified, I may thus describe:

1. The uselessness of prolonged mercurial courses in case of old atrophy of the optic nerve,—for example, in ataxia,—even if remotely caused by syphilis. The drug cannot restore nervous life to the wasted fibres; it can depress seriously the nutrition of the patient, when this, of all things, should be built up. Who that has looked at a section of an atrophic optic nerve beneath the microscope and seen the delicate nerve-fibrils replaced with coarse connective tissue, will not appreciate the force of the argument.

2. The uselessness of mercury in certain chronic affections of the inner tissues of the eye,—cases in which, as Dr. Landolt aptly expresses it, the ophthalmoscope reveals "the ruin of the choroid and retina,"—for example, pigmentary degeneration of the retina, atrophic choroido-retinitis, and disseminated choroiditis. What power can mercury have, no matter how administered, in re-establishing functions to elements which have undergone chronic cicatricial change, atrophy, and positive destruction?

3. The doubtful value of mercury in non-syphilitic chronic exudative inflammations of the uveal tract,—*e.g.*, irido-cyclitis and irido-choroiditis. In other words, the exact cause of these conditions—rheumatism, gout, depressed nutrition from wasting disorders, abnormal menstruation, or chronic uterine diseases—must be discovered and remedial agents directed according to the findings.

It should be particularly remarked that all this refers to vigorous use of mercury, pushing the drug to the point of tolerance, or even beyond. No one doubts the efficacy of the drug in proper dose, especially the bichloride and biniodide, as an enricher of the hæmoglobin percentage of the blood, as a tonic pure and simple, as an antiplastic, and as possessing the subtile influence which we call alterative. Within these limitations mercury must always remain a potent agent in our hands, especially in the early stages of these troubles,—for example, when an optic nerve is on the stage of cloudy swelling, slight œdema, or passive hyper-

* *Journal of Pathology and Bacteriology*, November, 1893.

† *British Medical Journal*, March 26, 1892.

æmia, when, as Dr. Norris well expresses it, the nerve-head "is sickly."

We now naturally pass to the treatment of optic nerve atrophy, whether it be primary, secondary, or consecutive. Necessarily this depends upon the original cause, and general measures directed to the removal or modification of this meet the most important indications. But have we any new method to offer, or new drug, with perchance a selective influence upon the optic nerve; anything better than strychnine, as originally recommended by Nagel in 1871?

When Charcot revived suspension in the treatment of locomotor ataxia, ophthalmologists and neurologists naturally began to observe whether with improvement in the general condition there was amelioration of concomitant visual deficiency. Galezowski, studying cases of tabetic optic nerve atrophy with reference to this point, found suspension of no value, and concluded that while it might act favorably in the nervous troubles depending upon the spinal cord, it had no influence on the alterations in the higher nerve-centres and the morbid phenomena which result from them. Eulenberg and Mendel, however, reported benefit in one case, and the matter has been referred to by Darier, Abadie, Desnos, and Bernhardt. Recently Bechtereff and Vorolynski,* experimenting with suspension in the treatment of various nervous diseases, have noted, among other things, its good effect upon visual acuity, especially in tabes. Although the improvement thus far obtained is meagre in quantity and the outlook extremely dubious, the subject is of sufficient importance to invite a more accurate study than has thus far been accorded to it.

If it be true, as De Wecker recently said, that it is easier to joke about injections, after the manner of the late Brown-Séquard, than to refute their indisputable effect, under certain circumstances, the relation they bear to ocular therapeutics is worthy of at least a moment's consideration. For example, Galtier, using the injections of organic liquids in a case of tabetic atrophy of the optic nerve, obtained improvement of the visual acuity amounting to nearly fifty per cent. Bourgon's† results, however, in cases of intracranial, diabetic, and tabetic atrophy, were absolutely negative. Darier, while willing to ascribe to the Séquardian injections an excellent tonic effect, especially in reduced, debilitated, or neurasthenic organisms, failed to secure with them noteworthy improvement in optic nerve atrophy, and De Wecker, who introduced the subject for discussion in the French Society of Ophthalmology, although satisfied with the inefficacy of this method of therapeutics in the ocular indications of ataxia, recommends them because they increase the strength of the patient. Altogether the weight of evidence is entirely against them, in so far as a special or specific influence upon optic nerve degenerations is concerned.

Antipyrin has recently claimed the attention of the French observers in the treatment of optic nerve atrophy, having been introduced to the notice of the profession by Valude,‡ who believes the drug, by reason of its peripheric vaso-motor action, may have a favorable influence in certain forms of optic nerve atrophy which arise from a vascular change in the connective interstitial tissue which constitutes the stroma of the optic nerve. His dose is 1 gramme of antipyrin to 2 grammes of distilled water, given subcutaneously. A few observations confirming Valude's views have been recorded by other French reporters,—for example, by Bourgon; but it is difficult to appreciate the mechanism of its action under these circumstances, especially when we consider that the same value which is credited to it might readily be obtained by less objectionable remedies.

The excellent results ascribed by Boé to lactate of zinc in one case of sudden failure of vision without ophthalmoscopic change, when other measures failed, can scarcely have been more than a coincidence; indeed, this is the practical conclusion of the committee which investigated the matter.

In the medicinal treatment of optic nerve atrophy—strychnine, phosphorus and its compounds, nitrate of silver, antipyrin, and the alteratives—the probable value of nitro-glycerin should not be forgotten. We are all familiar with the temporary beneficial effect of nitrite of amyl upon the visual acuity of certain types of toxic amblyopia, and hence glonoin, in graver forms of atrophy, when they have not progressed too far, may assist in bringing nourishment to the fibres by its vaso-motor influence.

It would be unbecoming to leave the subject of atrophy of the optic nerve without at least a reference to the use of electricity in this affection. The most rose-colored reports of the value of this agent in the treatment of atrophy of the optic nerve has been described, Dor, for

* *Annales d'Oculistique*, March, 1893.

† *Ibid*, November, 1893.

‡ *Ibid.*, September, 1893.

example, reporting a notable improvement in forty per cent. of his cases. On the other hand, the great majority of careful observers are inclined to agree with the assertion of Noyes, that electricity "has failed to vindicate its pretensions to any real value, although by its capacity for exciting phosphenes, it fosters the hopes of a credulous incurable."

Recently Dr. Charles Eugene Riggs has called attention to the value of *voltaic alternatives* in atrophy of the optic nerve,—a method which, I understand, has been used by Drs. Faught and L. Webster Fox, of this city. Dr. Riggs believes that the physiological action of the remedy is more energetic with reversal of the polarity of the electrodes than with simple closures.

Before we can establish the status of electricity in the treatment of atrophy of the optic nerve, a proper classification of the types of the affection thus treated must be given by the reporters, and also, if possible, the precise cause of the malady. This deficiency is notable in many of the records and renders them valueless for scientific purposes. Moreover, these cases should not be published, no matter what the method of treatment has been,—strychnine, stretching, suspension, Séquardian injections, voltaic alternatives, antipyrin, the alteratives, or vaso-motor dilators,—without the most exact measurement of vision, direct and indirect, before, during, and after the treatment; neither should they be reported until sufficient time has elapsed to demonstrate that the improvement has been a permanent one.

Before leaving the subject of electricity, it is seasonable to refer to its use in troubles other than those connected with the optic nerve, particularly opacities in the vitreous humor. More than twenty years ago Carnos recommended the continuous galvanic current under these circumstances; and it was Toulon, I think, who recorded twenty-two cures among twenty-four cases thus treated,—an experience that is scarcely credible. Others have failed to secure the slightest improvement with electricity administered for this purpose, although I am aware that some of my colleagues, especially in this city, believe in its efficacy and employ it with satisfaction.

Within the last month Pansier * contributes a number of observations on the use of the continuous current in the treatment of irido-choroiditis, and reports the disappearance of adhesions and a calming and sedative effect under its influence. The negative pole is applied to the lids and the positive in the region of the superior cervical ganglion, with a current of five milliampères' strength. There is enough evidence to make it worthy of further trial, and it is desirable that those who have had an abundant experience should record their results.

Time does not permit the review of the many other interesting applications of electricity to ocular lesions, especially in the treatment of muscular asthenopia, paralysis of the orbital muscles, and corneal opacities.

We are prone to apply the best resources of our art to the relief of eye-strain in the widest acceptation of this term, and are ever endeavoring to perfect our methods for neutralizing refractive anomalies, imperfect balance of the external ocular muscles and deficient accommodative power. But it occurs to me we are not equally active, when all this has been accomplished, in subduing the local effects caused by long-continuance of these abnormal conditions. The picture of a hyperæmic nerve-head, imperfectly differentiated from the unduly flannel-red surrounding choroid, itself woolly in appearance and exhibiting faint dark areas in its periphery, indicating interspaces between its larger vessels, together with a streaked and slightly opaque retina, is familiar to all practical ophthalmologists. It is typical of the asthenopic and aching eye. Mydriatics, glasses, and rest do much for such eyes, but why not as well meet evident indications with remedial agents? We would medicinally treat other organs similarly affected, and why not the eye, when we can actually see the lesions, which in most of the other portions of the body can be inferred only from the symptoms? The iodide and bromide of sodium and potassium, iodide of iron, the alteratives generally and various preparations of ergot, naturally suggest themselves, and I suspect that cannabis indica has a distinct sedative influence upon the retina under these circumstances. When we remember that this congested condition of the deeper tissues of the eye may be a forerunner of organic changes, probably of cataract itself, I am persuaded that such therapeutic precautions are of great value, and if ophthalmology was in no other respect a debtor to Dr. Norris and Dr. Risley, their insistance upon the points just enunciated would always be a monument to their credit.

It is just about a decade since Koller's discovery of the anæsthetic properties of cocaine conferred upon ophthalmology an inestimable service. Since then, from time to time, other substances have come to the front, presenting their claims as local anæsthetics. Thus, we

* *Annales d'Oculistique*, April, 1894.

have seen ouabaine, erythrophleine, lewinin, helleborein, and strophanthin struggle for recognition, and more or less quickly drop from the list of drugs useful in this respect. Often of pharmacological interest, the amount of irritation which they produce renders their practical application valueless. Whether the same fate awaits the new coca base, tropacocaine, called by Chadbourne, to whom we are indebted for a very interesting research as to its properties, tropsin, remains to be seen. Schweigger, it will be remembered, after several months' experience with this drug, reported favorably,—an experience that has been confirmed by his assistant, Dr. Silex.

Certain disadvantages connected with the use of cocaine are well-known and always avoided by careful operators, especially its power to wrinkle the corneal epithelium and to render this membrane more susceptible to the disturbing action of vigorous germicides, particularly bichloride of mercury. Recently, Mellinger, to whom we owe much for his excellent researches on sublimate opacities in the cornea, called attention to another hurtful action of cocaine,—namely, that it hinders, after section of the cornea, the development of a primary lamellar wound closure, and prevents the formation of a "coagulation support" in the parenchymatous portion of the corneal incision. These researches probably explain some cases of delayed union after cataract section and indicate the necessity of using cocaine in quantity only sufficient to anæsthetize the cornea.

Our list of mydriatics has been enriched within the past year by scopolamine, for the introduction of which we are especially indebted to Raehlmann. This drug, it will be remembered, is an atropoid alkaloid, from the roots of the *Scopolia atropoides*. Certain advantages have been claimed for it: that in smaller dose it is more active and also more sedative than atropine; that the duration of the mydriasis is shorter; that, if properly used, toxic symptoms do not occur; and, finally, that it has no unfavorable action upon intraocular pressure, even if there be pathological increase of tension.* Raehlmann's communication has been followed by a number of reports abroad and by a few in this country, especially those of Derby in Boston and Pooley in New York, the latter observer being unwilling to commit himself to its superiority over other mydriatics. Sufficient evidence, however, has accumulated that it is a very efficient mydriatic and cycloplegic agent, and I have no doubt that its exact status will be found when observations, which I understand are being made at present by Dr. Oliver, shall have been published.

When pyoktanin was first introduced by Stilling it threatened to make an impression on ocular therapeutics as intense as its own violent color, but gradually failure on the part of many observers to confirm the results reported by its introducer caused it to fall into disuse, although every now and then some stanch adherent of the drug comes forward and once more flaunts its claims. Perhaps, as Cordonnier has stated, much of the disappointment has been due to failure to obtain real pyoktanin, many of the violet dyes found in commerce being totally inadequate. Personally, I confess a lingering fondness for the drug in the treatment of at least one affection,—namely, purulent disease of the lachrymal passages,—although in all other respects it has failed me. It is mentioned now because it has recently been advocated, and very strongly, as an antiseptic and curative of great power in that dreadful disease, diphtheria of the conjunctiva. Sourdille, for example, uses a salve of methyl-blue (1 to 1000), because Janicke has demonstrated that Loeffler's bacillus does not grow in bouillon containing methyl-blue, even in very minute proportions. If this observation is correct, it is a very important one, and should be confirmed or refuted. The difficulty of judging of its value resides in the fact that it has been employed in connection with other remedies,—alkaline solutions and stronger antiseptics.

Time does not permit a review of the advances in the ocular applications of the antiseptics, nor, indeed, is the subject strictly pertinent to the present address. We have learned, however, from abundant experimental research, that complete sterilization of the conjunctival cul-de-sac and the ciliary margins is impossible, but that proper cleansing lessens the number and the vitality of the micro-organisms, and hence should never be omitted. Proper cleansing, however, does not mean the perfunctory introduction of strong solutions of germicides, especially sublimate, which, improperly applied, are without definite value, and are prejudicial to the corneal nutrition.

Considerable work has been done to establish the value of certain antiseptics compared with bichloride of mercury,—for example, cyanuret of mercury, so strongly urged by Chibret, trichloride of iodine, advocated by Pflueger, biniodide of mercury, endorsed by Panas and by Fenton of this city, and the recently-

* The experiments of Lobassow do not confirm this statement.

introduced formaldehyde, which, under special circumstances, Valude has eulogized as a substance of singular power, a recommendation which meets with confirmation in the research of Chas. Slater and S. Rideal,* just published. Whether the tricreosol, apparently destined to assume a front rank among antiseptic substances useful in general surgery, will prove of equal value to ophthalmologists, future experience will determine.

Although almost every germicide and antiseptic solution has been employed in that much-dreaded disease, ophthalmia neonatorum, nothing novel or distinctive has been added to the long list of remedies, unless, perchance, we except the revival of an old remedy,—namely, *copious irrigations* with a solution of permanganate of potassium. This drug, it will be remembered, has reached a prominent place among the remedies now employed by general surgeons in the treatment of urethral gonorrhœa, and there are indications that it should hold a place high in our esteem as an irrigating agent in the treatment of this disease.

While I do not decry the value of bichloride of mercury, properly used, in this affection, I am persuaded that it has very often been the means of seriously impairing the nutrition of the cornea on the one hand, and, on the other, has too frequently lulled the surgeon into a sense of false security, simply because he has introduced within the conjunctival cul-de-sac the solution of a drug which is credited with remarkable germicidal properties, properties which, however, are not exercised under these circumstances.

The serious nature of purulent conjunctivitis in new-born children is recognized by every educated physician, and it was perhaps no exaggeration when Rivière, of Bordeaux, declared that it alone was responsible for nearly one-third of the cases of blindness, and had placed in the care of Europe well-nigh one hundred thousand victims. We know that in our own country more than thirty-two per cent. of the blind owe their affliction to ophthalmia neonatorum, and therefore the measures to prevent it rank in importance with those employed against small-pox and tuberculosis, and demand the assiduous practice of the means which experience has taught to be effective. What these means are it is needless to detail to this audience, but I may be permitted to urge upon each physician here the necessity of his personal influence to assist in securing legislative regulations for the prevention of this appalling cause of blindness. The matter, as you know, is in the hands of a committee of the American Medical Association, and under the guidance of so able a chairman as Dr. Lucien Howe, of Buffalo. Laws of this character have been passed in New York, Maine, Rhode Island, Minnesota, Ohio, and Maryland, and it is the sacred duty of each one of us to see that similar good legislation shall be enacted in the great State of Pennsylvania.

While, to quote from an editorial in the *Philadelphia Polyclinic*, "It is doubtless too much to claim that all cases of blindness from ophthalmia neonatorum are preventable, ophthalmic surgeons know that it would be very rare if reasonable care was exercised and efficient treatment always promptly inaugurated." When we remember that carefully-compiled statistics demonstrate that over seventy per cent. of all who become blind during the first year of life are rendered sightless by purulent ophthalmia, and that the victims of this disease represent a vast army of thousands upon thousands of human beings, there is a crying need for every measure properly conceived and properly carried out, medicinal and legislative, which shall prevent the disastrous results of this affection. He who takes a hand in this work engages, as Cohn has well said, in a labor worthy of the noblest.

* *Lancet*, April 21, 1894.

A PRESCRIPTION FOR CHRONIC DIARRHŒA.

The *Journal de Médecine de Paris* for May 6, 1894, recommends the following:

℞ Salicin, ʒii;
Syrup, a sufficient quantity.
Make into twenty pills, and give 1 pill every four hours.

THE TINCTURE OF ACONITE FOR TETANUS.

According to the *Journal de Médecine de Paris* for May 6, 1894, WEDEMAN has obtained excellent results from the use of this drug in tetanus, using the tincture in the dose of 5 drops every two hours and afterwards every four hours, or administering the following prescription:

℞ Chloral hydrate, gr. xxx;
Bromide of potassium, ʒi;
Tincture of opium, ʒss;
Tincture of aconite, ʒi;
Water, ℥iii.

Teaspoonful doses of this mixture may be given every hour.

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Leading Articles.

THE TREATMENT OF MALIGNANT GROWTHS BY TOXINES.

THE medical profession has during the past year watched with constantly increasing interest the studies of those bacteriologists and clinicians who have from time to time contributed articles upon the value of the treatment of malignant growths by means of injections of pure cultures of the micro-organism of erysipelas or of the toxines derived from this organism and the bacillus prodigiosus. One of the most valuable and interesting of these papers was that of Dr. Coley, of New York, who during the past three years has been carrying out a series of clinical experiments in this line of work. One of his recent reports, it will be remembered, was published in the *American Journal of the Medical Sciences* for May, 1893. As a result of his studies he reached the conclusion at that time that the injection of toxines produced results almost, if not quite, as good as those obtained by the use of the micro-organism of erysipelas itself, and that their employment was not followed by some of the disadvantageous symptoms and dangers which the micro-organism itself produced. His studies also seemed to prove conclusively that this method of treatment was practically valueless in carcinoma and most useful in cases of sarcoma, particularly where this growth was situated in soft tissues. A still later report has been made by Dr. Coley to the American Surgical Association during the recent Congress in Washington, which is summarized in the *Boston Medical and Surgical Journal* for June 14, 1894, as follows:

Twenty-five cases of sarcoma, eight cases of carcinoma, and two cases of sarcoma or carcinoma were treated with the combined toxines. Including one case treated by the injections of fluid living cultures, there were five cases in which it was reasonable to hope for permanent cure.

The first—sarcoma of the neck and tonsil, twice recurrent—has gone nearly three years without treatment.

A second—sarcoma of the back and groin—is perfectly well and free from recurrence fourteen months after cessation of treatment.

A third—sarcoma of the abdomen and pelvis—is in perfect health one year after leaving the hospital, and the very small portion of the tumor which had not been wholly absorbed has remained dormant.

A fourth—sarcoma of the abdominal wall, which had entirely disappeared under two and a half months' treatment with the toxines—is perfectly well and without recurrence three months after treatment was discontinued.

A fifth—sarcoma of the iliac fossa—is well within one year since beginning of treatment, with the tumor one-third the original size, and the element of malignancy apparently destroyed.

A sixth—recurrent sarcoma of leg and thigh—is still under treatment. The sarcoma of the stump, the size of a hen's egg, has entirely disappeared.

Of the remaining nineteen cases of sarcoma treated, nine others showed marked improvement, while in eight the improvement was very slight and in two no improvement was noted.

Of the eight cases of carcinoma, all but one showed more or less improvement, and in three cases it was very marked.

All of the cases treated were inoperable and hopeless. In all the diagnosis was not only es-

tablished by eminent surgeons, but confirmed by expert pathologists.

No rational explanation of the action of the toxines upon malignant tumors could be offered, except on the assumption that such tumors were of micro-parasitic origin. Admitting this theory, evidence in favor of which is steadily increasing, explanation would be easy,—namely, antagonistic bacterial action.

The conclusions drawn from the cases treated were as follows:

1. The curative action of erysipelas upon malignant tumors is an established fact.

2. This action is much more powerful on sarcoma than carcinoma.

3. This action is chiefly due to the soluble toxines of the erysipelas streptococcus, which toxines may be isolated and used with safety and accuracy.

4. This action is greatly increased by the addition of the toxines of bacillus prodigiosus.

5. The toxines, to be of value, must come from very virulent cultures and must be freshly prepared.

6. The results obtained from the use of the toxines, without danger, are so nearly, if not quite, equal to those obtained from an attack of erysipelas, that inoculation should rarely be resorted to.

This method of treatment has been tried to a very considerable extent in Philadelphia, with results by no means as encouraging as those which have been reported by Dr. Coley. It has been found to produce either no favorable influence, or in other instances the development of a high fever and other symptoms of reaction following the injection have so increased the patient's discomfort and sapped his strength that it has seemed as if the treatment actually hurried the patient towards his end. In two cases of osteo-sarcoma in which the toxines were employed, in which condition, by the bye, Dr. Coley also expresses doubt of their value, no favorable action was discoverable to the writer of this article; in fact, he is convinced that they did harm rather than good. The question as to the real value of this method of treating cases which, under ordinary methods, are absolutely hopeless is still, of course, open to debate, and this article is written not so much with the idea of condemning the method as of reflecting the views which force themselves upon us at this time. The very fact, however, that all such cases have been considered hopeless, and that Dr. Coley has reported recoveries in some instances, should make us very cautious about throwing discredit on a remedial measure which has been successful in any cases.

THE TREATMENT OF HIGH ARTERIAL PRESSURE.

THE fact that high arterial tension is a condition which requires medicinal interference has become more and more recognized as we have employed the nitrites with constantly increasing frequency. Indeed, it is probable that many physicians of the present day who employ nitro-glycerin or other nitrites as cardiac stimulants in reality get the good results obtained solely through the decrease in the arterial tension, which results in the easier action of the heart. In other words, the improved action of the heart after nitroglycerin has been given is not due to the fact that it has acted as a cardiac stimulant, but rather that by decreasing the work of the heart that organ is able to perform its functions more satisfactorily. A mistake is frequently made by the careless physician when called to a case in which the heart is evidently failing. Signs of cardiac exhaustion and of dilatation divert his attention from the high arterial pressure, and, as a result, he jumps to the conclusion that the failure of the heart is due to an actual lack of strength in that viscus, when in reality its failure is produced not because it is weaker than normal, but because the arterial tension is so great that even with compensatory hypertrophy it is almost impossible for it to force the blood through the contracted blood-vessels. Too frequently, under these circumstances, the physician attempts, by the administration of digitalis, strophanthus, or other cardiac stimulants, to so increase the power of the heart that it will overcome the tremendous resistance to its normal action. Sometimes, under the effect of this stimulation, temporary improvement does take place, but the rational therapeutics of such a case demands that the pressure shall be taken away, and the heart not only allowed to rest, but also quieted, in some cases, by drugs which, if not direct cardiac depressants, certainly act as sedatives to this organ. It would seem that in many cases of high arterial tension the spasm of the vessels is due more to a condition of hyperexcitability of the vaso-motor system than to any direct pathological change in the blood-vessel wall. For this reason the administration of nervous sedatives is often of advantage, either with or without the use of nitroglycerin. A prescription such as follows may be employed in some of these cases with advantage, particularly as it aids in relieving the restlessness of the patient, who may rebel against being confined or deprived of exercise:

℞ Chloral, ʒii;
Bromide of sodium, ʒii;
Syrup of lactucarium, fʒi;
Water, q. s. ad fʒiii M.

Sig.—A teaspoonful should be taken in a little water every four hours, or not less than three times a day.

In many cases, as is well known, the use of nitro-glycerin, while indicated by the condition of arterial tension, is contraindicated by reason of the headache which it produces in susceptible persons, and in such instances this prescription may also be given with advantage.

THE MEDICINAL TREATMENT OF SOME OF THE CONSEQUENCES OF EYE-STRAIN.

THE contest over the value of mydriatics in the correction of errors of refraction continues to be waged in certain quarters, but we believe that the vast majority of careful ophthalmic surgeons are not disposed to reject drugs which abundant experience has proved to be among the most necessary articles in their armamentarium, in spite of the contemptuous references to the "old-fashioned" practice of dilating the pupils before endeavoring to select suitable glasses for the patient, which are occasionally heard.

In a previous issue of the THERAPEUTIC GAZETTE we point out that the cycloplegic action of atropine and other alkaloids of allied physiological properties is only one of several effects which they produce when their solutions are instilled into the conjunctival cul-de-sac under the circumstances just named. Perfectly willing to admit that the terms "congestion of the choroid," "hyperæmia of the nerve-head," "retinal striation," etc., are vague and do not indicate exactly the nature of the process which they attempt to designate, we are none the less persuaded that the retino-choroidal disturbances which are manifest to the ophthalmoscope in eyes long the subjects of strain from uncorrected ametropia do not disappear, and consequently comfort does not ensue, if the refractive error is neutralized without the use of mydriatics. Whether they act by producing perfect physiological rest for a certain number of days (and therefore atropine is the best of all of them), or whether they have some local sedative effect the nature of which we do not quite understand, or whether both of these actions are combined and associated with still others connected with their influence upon local circulatory conditions, is a matter of small importance. The fact remains that these choroidal disturbances disappear when they are judiciously used, and that comfort and increased ocular health are results otherwise unobtainable.

We are not alone, however, dependent upon the use of mydriatics for securing these results, but may turn with confidence to certain constitutional remedies, prominent among which are the iodides of sodium and potassium, the bromide of potassium and allied salts, ergot, the iodide of iron, mercury in small doses, particularly the bichloride and biniodide, and finally cannabis indica, although perhaps the last-named drug has no selective influence upon the coats of the eye itself, but exercises beneficial influence in a more general way. No one who has watched the steady improvement in the color of a congested nerve-head, the disappearance of the so-called lozenge-like clouds in the periphery of the choroid, so well and so often described by Dr. Risley, and even fine opacities in the vitreous under such lines of treatment, can possibly doubt the efficacy of these drugs. The effort of all treatment is to restore the eye to the highest state of health, and this state cannot be reached so long as the lesions described exist.

Material aid in this respect, after the effect of the mydriatic has subsided, may be gained by the use of two local measures,—namely, hot water and a weak solution of the sulphate of eserine or the hydrochlorate of pilocarpine. It is a well-known therapeutic law that the physiological effects of remedies are frequently more accurately obtained when the drugs are given at stated intervals during the twenty-four hours. So it is with these local measures,—for example, if hot douches or hot stoups are used for exactly the same number of minutes at the same hour night and morning, the local sedation is more effectual than that which follows similar applications at irregular intervals.

Insufficiencies of the lateral orbital muscles so evidently need mechanical treatment in the majority of instances, whether this be with prisms, prismatic exercises, or operative interference, that we do not often employ drugs for their relief, unless we make an exception of strychnine, which, for a long time has been utilized on account of its stimulating effect upon the nervous apparatus, and no doubt every one has seen cases in which good results have followed this treatment. Perhaps these results have been due to the general tonic effect of the drug, just as a muscular insufficiency will often improve when the whole system is brought into better condition by any other form of constitutional treatment. There are a few cases, however, in which either strychnine itself, or, better,

as the writer of this note believes, nux vomica, in the form of a good tincture, seems to have a species of selective influence, although it is confessedly difficult to differentiate between its general action and what may be called its local tonic effect. Be this as it may, either full doses of strychnine, or ascending doses of tincture of nux vomica, the latter drug being increased until the patient is taking 50 or 60 drops three times a day, are at times followed by a marked relief from muscular asthenopia, particularly if the interni are insufficient. Necessarily this method of treatment has not always been used to the exclusion of other measures,—glasses, prisms, and exercises; hence its exact therapeutic relation is difficult to determine, but it is always a proper method to try, provided the retina is not in a state of irritability. If it is, the strychnine or nux vomica is apt to increase the aching of the eyeballs, and is contraindicated precisely as it is in the early stages of irritative lesions in the nervous centres. This fact may explain many of the failures to gain relief with these drugs, when the character of the insufficiency would seem to indicate them.

THE DANGERS OF NON-STERILE ALKALOIDAL COLLYRIA IN CORNEAL LESIONS.

OPHTHALMIC surgeons are accustomed to exercise every precaution to secure sterilization of the collyria which are to be used after a section of the cornea,—for example, in the extraction of cataract, or similar operation necessitating opening of the anterior chamber. In recent times much attention has been directed to this subject, and we are now in possession not only of the best methods of chemical sterilization, but of certain ingenious tubes and flasks, by means of which at the time of the operation the solutions of cocaine, eserine, or atropine may be rapidly rendered perfectly aseptic by means of heat.

Chemical and bacteriological investigations have proved the necessity of such precautions, because, sooner or later, the solutions of the alkaloids used in ophthalmic practice are infested with micro-organisms,—namely, the micrococcus aquatilis, the bacillus liquefaciens, the proteus vulgaris, the micrococcus prodigiosus, the bacillus implexus, and with various fungi, particularly the aspergillus glaucus. Of these organisms, the proteus vulgaris, the micrococcus prodigiosus, and the bacillus implexus, when introduced into the anterior chamber, are capable of producing a purulent inflammation of the iris, cornea, and deeper coats of the eye.

It is not alone in connection with surgical manipulations, however, that unclean solutions present dangerous features. They are almost certainly the cause of the toxic conjunctivitis (atropine, eserine, and cocaine conjunctivitis), and, probably, as Philippson long ago declared, the direct source of certain ulcers of the cornea, which, at first simple in character, become infected with these impure drops, and pass into a serpentic or sloughing condition. Recently De Wecker has called renewed attention to this danger, and has practically stated that in the vast majority of cases the use of atropine or eserine in the treatment of corneal ulceration is prejudicial to the cure of the case. He has come to rely almost entirely upon mechanical and antiseptic measures; for example, curetting the corneal ulcer while its surface is being sprayed with a boracic-acid solution, and subsequently bandaging the eye with a dry sterile dressing. While such treatment has much to commend it, we cannot, of course, entirely set aside the use of atropine under these circumstances, particularly when the iris is associated in the inflammation and we wish for the mydriatic effect of the drug. We can, however, with very little difficulty, render these alkaloidal solutions sterile when they are used by the surgeon himself or by competent attendants. It becomes a question, however, whether patients, particularly those who frequent dispensaries, should be given atropine and eserine drops for home use. When we remember that within a very few hours after these solutions come from the druggist's shop they are contaminated with fungi and, after careless handling, with positively pathogenic microorganisms, it is extremely likely that an ordinary simple ulcer of the cornea, or perhaps an abrasion, may be readily infected, and develop into a sloughing lesion. Therefore it seems wise to insist upon the daily attendance of patients thus affected, so that skilled hands may introduce into the conjunctival cul-de-sac clean solutions, when these are needed.

If the patients can be retained within the hospital (which, unfortunately, is frequently impossible), no source of anxiety on this score is created; but it is more than doubtful whether solutions of atropine given to careless attendants, and still more carelessly used in homes far from cleanly, can be of the slightest service in bringing these corneal ulcerations to a favorable termination; and De Wecker's warning may well be considered, even if we are unwilling

to accept his somewhat sweeping assertion in regard to the valuelessness of alkaloidal collyria, under most circumstances, in the treatment of corneal ulcers.

The necessity for sterilizing solutions frequently, even when they are used by properly-accredited attendants in hospital practice, is, perhaps, too frequently overlooked. More than one recent investigation has shown that the solutions, bottles, and pipettes in treatment cases thus employed are thick with contamination. Therefore each dispensary service, where numerous cases of corneal disease require treatment, should be provided with one of the several excellent sterilizing apparatuses now on the market, which may be so readily and so promptly used that this source of contamination is easily removed.

THE PRECOCIOUS TREATMENT OF SYPHILIS.

IN accordance with the teaching of the great syphilographer, Fournier, perhaps the general custom the world over is to delay constitutional treatment of syphilis until secondary manifestations—that is, pronounced constitutional involvement—have established the diagnosis beyond peradventure.

Jullien, a specialist of almost as wide experience, strongly advocates a treatment quite the reverse of this. It is worthy of note that thirty years ago, Diday, questioning what might be called the expectant treatment, made a careful study of a series of cases, one set receiving practically no treatment, the other subject to the full influence of mercury as soon as the primary manifestation was unmistakable. He noted as a result that secondary manifestations were retarded about seven days, but that they were by no means prevented. He, moreover, stated that mercury thus administered seemed to lose its efficacy, and that when these delayed secondaries appeared they were more rebellious to treatment than where no drug had been administered.

Jullien, as a result of similar investigation undertaken some twenty years later, arrived at quite contrary results.

On the employment of the drug hypodermically beneficial effects were still more marked, so that secondaries were delayed not merely for days, but for several weeks, and even when they appeared they were less numerous, thus showing that the action of the virus is not only retarded, but attenuated. The question then naturally arose as to whether by a vigorous and prompt treatment not merely attenuation could be accomplished, but absolute destruction of the specific poison. As a result of experiments in this line, he finally settled upon the hypodermic use of calomel as proving most efficacious. The preparation he uses is as follows:

℞ Calomel, gramme i;
Vaseline, grammes x;
Sig.—Administer in ten injections.

Of course this mixture must be perfectly sterile. The sublimated calomel should be washed with alcohol and dried in hot air. The vaseline should be distilled and the mixture should be made in a vessel which has been sterilized and flamed and kept perfectly aseptic. The skin is prepared as for a surgical operation, and the hypodermic needle and syringe are boiled. The injection is driven deeply into the muscular tissue of the external iliac fossa and the punctured point is dressed with collodion. Provided the kidneys are healthy, and on this point the surgeon should always assure himself before beginning treatment, there is no danger of salivation, of local septic infection, or of any other complication. The calomel lies in the tissues and is slowly absorbed. In experiments upon animals eighteen months after injection, traces of the drug were found at the seat of operation. The very fact of the drug thus becoming stored in the system necessitates most careful watch for its first constitutional symptoms. Those most commonly observed are gingivitis, thoracic oppression, and a tendency towards syncope. When any such symptoms develop, the drug should at once be suspended. Jullien holds that the moment a primary lesion is detected, if it is favorably situated, it should be excised, but whether or not this operation is performed, no time should be lost in starting the calomel treatment. The injections are made in regions approximately near the seat of primary infection. Thus, if the sore is placed upon the breast or the face, the post-scapular regions are selected. As an immediate result the primary lesion cicatrizes rapidly. Often no true ulceration takes place. This in itself is almost diagnostic of the specificity of the lesion. The series of injections is repeated at about fifteen days' interval. In about two or three or four months a few superficial mucous patches and some slight, irregular, scarcely perceptible skin lesions appear. In the first two months an injection of calomel is made every fifteen days in the dose above mentioned. The ordinary man bears 10 centigrammes very well; those in poor health receive from one-half to three-fourths of this dose. After the second month

an injection is given every twenty days, then every twenty-five or thirty days, in accordance with whether the secondary lesions present themselves or not. After six months soluble preparations may be substituted. Jullien states that he has applied these principles to thirty cases, all of which have been most carefully observed, and as a result he announces himself more than ever convinced of the fact that the most successful treatment of syphilis depends upon the vigorous administration of mercury from the onset of the primary symptom, without allowing the loss of precious time while waiting for the positive diagnosis based upon secondaries. Indeed, there is not a disease in which this principle is not generally recognized that the most successful attack is that made in the beginning.

Guyard, while practically agreeing with Jullien in regard to the importance of the early treatment of syphilis, holds that equally favorable results are to be obtained by other means. Thus, he administers sublimate by the mouth in full doses, holding that otherwise no beneficial effects are obtained. Thus, when the protiodide of mercury is given, at least four grains a day should be administered; the sublimate he gives in 1- to 2- to 3-grain doses.

This treatment proposed by Jullien, or, at least, some modification of it, certainly commends itself to the common sense of every careful student of syphilology. Recently there appeared the promise of a new and entirely efficacious method voiced by Pellizzari and based on modern pathology and coming therapeutics. He endeavored as soon as the chancre appeared to immunize the patient by blood-serum taken from patients who had already suffered from secondaries, and who exhibited no lesions. His results, satisfactory as they were, do not compare with those cited by Jullien. Though this method of immunizing is full of promise, it has not brought us anything of practical value, and we still have to fall back upon the specific which has served us so well for many years; that this has a retarding and destroying effect upon syphilitic virus none deny. This being the case, that the early use should retard and render more mild the secondaries seems self-evident. The objection to this lies in the fact that diagnosis from a primary sore alone is impossible. It is impossible, however, only in a very small percentage of cases, but it is probable that the results in large numbers of cases treated would be better were a plan similar to Jullien's followed, though it is undoubtedly true that a certain very small number of cases would be subject to specific treatment, although they in reality had never acquired syphilis.

Reports on Therapeutic Progress.

THE DIETETIC TREATMENT OF DIABETES MELLITUS.

An interesting paper on this topic is that published in the *Medical Chronicle* for May, 1894, by WILLIAMSON.

Many substances have from time to time been employed (gluten bread, bran cakes, almond bread, etc.). The great objection to these breads are: (1) they are mostly exceedingly expensive; (2) they are often very unreliable; (3) they are not tolerated for any length of time by the patient. With a very little trouble a diabetic patient can have a number of diabetic breads and cakes prepared at his own home, and such home-made preparations are more reliable, less expensive, and more palatable than the majority of those so largely advertised by various firms. Ebstein has drawn attention to the value of a substance named, in Germany, aleuronat. This is a vegetable albumin prepared from wheat by a chemist, Dr. Hundhausen. From this substance bread can be baked by the addition of ordinary flour. It is a cheap form of albumin, and can be used as a substitute for ordinary flour in the preparation of soups, sauces, etc. It is a yellowish powder, and contains from eighty to ninety per cent. of albumin in the dry substance.

The following are the directions for the preparation of bread containing about fifty per cent. of albumin in the dry substance. Aleuronat and white flour are mixed in equal quantities:

Two hundred grammes white flour equals about seven ounces;
Two hundred grammes aleuronat equals about seven ounces;
One hundred and twenty-five grammes butter (of the best quality) equals about five ounces;
One teaspoonful of salt;
Twenty grammes (400 grains) of baking-powder.

The flour and aleuronat are mixed in a dish warmed to a temperature of about 30° C., and the melted butter and milk (made lukewarm) gradually added, then the salt, and finally the baking-powder (one part of sodium bicarbonate and two parts of cream of tartar). The dough is well mixed, then formed into loaves, and baked at a good heat.

Cakes composed of aleuronat and cocoanut-

powder are very palatable, very cheap, and are particularly free from starch:

Two ounces of the finest desiccated cocoanut-powder;
Two ounces of aleuronat;
One egg;
A little milk.

The egg is beaten up, and the aleuronat and cocoanut-powder added, together with a very small quantity of milk. The mass is stirred together until a dough is formed. This is cut into thin cakes and baked. The addition of milk is not necessary.

Pavy long ago recommended almond cakes as a substitute for bread in diabetes. The sweet almond contains nine per cent. of sugar and dextrine, but by washing the meal with boiling acidified water, the greater part of the sugar is extracted. Almond meal washed in this manner is almost free from carbohydrate. It contains twenty-four per cent. emulsin and fifty-four per cent. fat.

Owing to the large quantity of fat which they contain, these almond cakes are not easy to digest. Another objection is the price. Only wealthy patients can afford them.

Seegen gives the following directions for the preparation of almond cakes:

One hundred and twenty-five grammes (about one-quarter pound) of sweet almonds are ground as fine as possible in a stone mortar. To remove the small quantity of sugar which the almonds contain, the pounded mass is enclosed in a linen bag, and this is soaked for a quarter of an hour in boiling water to which a few drops of acetic acid have been added. The almond meal is then mixed well with three ounces of butter and two eggs. Then the yellow of three eggs and some salt are added, and the mixture thoroughly well beaten up. The white of three eggs is beaten up into a froth and then mixed with the above. The mass is divided into cakes and baked by a gentle fire.

Saundby gives the following directions for the preparation of almond cakes:

One pound of ground almonds;
Four eggs;
Two tablespoonfuls of milk;
A pinch of salt.

Beat up the eggs and stir in the almond flour; divide in twelve flat tins, and bake in a moderate oven for about forty-five minutes.

A pound and a half of cakes prepared in this manner cost one shilling and six pence.

Saundby also gives directions for the preparation of cocoanut cakes:

Three-quarters of a pound of desiccated cocoanut;
One-quarter of a pound of ground almonds;
Six eggs;
Half a teacup of milk.

Beat up the eggs, and stir in the cocoanut and almond flour; divide into sixteen flat tins, and bake twenty-five minutes in a moderate oven.

Desiccated cocoanut costs four and a half pence per pound, and the cost of one and a half pounds of the above cake is one shilling two pence.

In Iceland and Lapland, Iceland moss (cetraria), deprived of its bitter principle, is used as an article of diet. The soluble portion is taken up by boiling water, and the decoction in cooling thickens and deposits a gelatinous mass. This soluble gelatinous substance is known as lichenin.

Saundby has published directions for the preparation of a pudding made from Iceland moss, which is much appreciated by diabetic patients.

For three hours the Iceland moss is soaked in water, then boiled in milk for three-quarters of an hour, strained, and poured into a mould and allowed to get cold. It may be sweetened, if necessary, with glycerin or saccharin.

CICATRICIAL NARROWING OF THE ŒSOPHAGUS.

TIETZE (*Deut. Med. Woch.*, 1894, Nos. 16 and 17) discusses the treatment of the narrowing consequent upon swallowing corrosives. He first records a case in a man, aged twenty-six, coming under treatment early. A peri-œsophageal abscess developed, and gastrostomy had to be performed. The stricture was ultimately successfully treated by bougies, and the gastric fistula healed spontaneously. The principle of not passing a bougie for some time in such cases is very generally admitted. Gastrostomy must not be delayed too long. Any question of œsophagotomy can hardly arise here. The diagnosis of abscess cannot be made until pus is spat up. A second stricture was present lower down in this case, and probably another in the neighborhood of the pylorus. In cases of long standing the bougie should be used, but it is not always successful. The lumen of the tube may be eccentric, or a diverticulum may exist above the stricture. In such cases, where fluids pass with difficulty and the nutrition of the patient is clearly suffering, gastrostomy should be done. An example is given of a fatal case in a child, aged one and three-quarters years, where delay precluded the

idea of an operation. Again, in severe cases, where fluids are swallowed with difficulty, and even small bougies pass, yet gastrostomy may be the only means of successful treatment. Hitherto bougies have been the sovereign remedy here. The passing of bougies is not unattended with danger. A case is recorded in a boy, aged sixteen, in whom, twelve days after gastrostomy, a thread was passed with a sound through the whole length of the œsophagus, one end coming out through the nose and the other through the gastric fistula. A drainage-tube was eventually passed through the stricture, and left. Dilatation was effected, and eventually the gastric fistula was allowed to close. In cases where fluids can still be swallowed and yet no bougie can be passed, a shot, with a thread attached to it, may be swallowed (after gastrostomy), and a drainage-tube thus be got through the stricture. If this procedure is not successful, bougies may be passed up the œsophagus through the stomach. A case of a boy, aged one and three-quarters years, is recorded, in which the dilatation of the stricture (opposite the upper limit of the thorax) could not be effected by way of the stomach. Œsophagotomy was performed, and a diverticulum was found above the stricture. A silk thread with a sound was passed through the œsophagus, and a drainage-tube introduced in this way. Bougies were subsequently passed. The œsophagotomy wound closed in four weeks, and the gastric fistula in one year and three-quarters after its formation, the patient being eventually perfectly well. Another case is related in a girl, aged twenty-two, in whom, after gastrostomy, attempts were made for some time to dilate the stricture from below, but a bougie could not be passed from above. Œsophagotomy was performed, a diverticulum found, and a communication made between this latter and the descending part of the curve into which the œsophagus had been thrown. A drainage-tube was got through, and dilatation completed with bougies, the patient eventually recovering. The author draws attention to the value of gastrostomy in these cases in (1) finding out the site of and treating the stricture, and (2) maintaining the nutrition of the patient. For these temporary gastric fistulæ Witzel's method is recommended. The author holds that (1) gastrostomy should be done in severe cases more often than it has been in the past, (2) continuous dilatation with a drainage-tube is more rapid and less dangerous than with bougies, and (3) combined gastrostomy and œsophagotomy may lead to success in some cases.—*British Medical Journal*, May 26, 1894.

THE ACTION OF BROMETHYLFORMINE IN THE TREATMENT OF EPILEPSY.

G. BARDET (*Les Nouveaux Remèdes*, April 24, 1894) publishes the experience of Féré, who has studied the action of *bromethylformine*—a derivative of formol—in the treatment of epilepsy. The new medicament, which is supposed to be represented by this formula, $C_3H_6N_2,C_2H_5Br$, is well borne by the animal economy. As a sedative, it has been given to children and adult women, in doses of from 30 to 60 grains (2 to 4 grammes), without causing the untoward after-effects frequently produced by the metallic salts. The remedy under consideration appears to have rendered good service in epilepsy, as shown by the results observed in six cases of that disease reported by Féré. It is asserted that the bromethylformine acts as an excellent substitute to the potassium salt, being particularly indicated in those individuals that exhibit idiosyncrasies against the latter medicament. The bromethylformine appears somewhat weaker in its action, but it is advantageous, from the fact that it does not cause the eruptive phenomena produced by the bromide of potassium. It is affirmed also that in those cases in which the cutaneous trouble was present as a consequence of the administration of the potassium salt, the ingestion of bromethylformine effected the disappearance of said eruption. This remedy is recommended in doses of from 3 to 3¾ drachms (12 to 15 grammes) a day.

THE THERAPEUTIC USES OF THE GLYCERO-PHOSPHATES.

In a preliminary communication, ALBERT ROBIN (*Gazette Médicale*, April 28, 1894) treats of the uses of the glycero-phosphates in clinical medicine, and concludes as follows:

1. The glycero-phosphates are powerful therapeutic agents, ameliorating the general nutrition through an action upon the nervous system.

2. They are especially indicated in nervous depression.

3. Hypodermically injected, these remedies produce effects still more pronounced than those of the testicular juice, whose medicinal virtue depends upon the amount of organic phosphorus which it contains. The employment of the glycero-phosphates, definite products, and the dose of which can be regulated, is preferable to that of the testicular liquid, an uncertain remedy and susceptible of alteration.

4. The observations so far made point to the

possibility that the subcutaneous injections of the glycero-phosphates can be utilized in the treatment of nervous asthenia (whatever the cause of the trouble), of phosphated albuminurias, of phosphaturias, of Addison's disease, of the various forms of sciatica, and of facial tic douloureux. In locomotor ataxia the results have been uncertain, but they point to a diminution of the lancinating pains occurring in this disease.

APPENDICITIS.

PERIER contributes a note upon this subject to the *Journal de Médecine de Paris* for April 22, 1894. In children he directs that the pain shall be relieved by small doses of extract of opium or by small quantities of morphine. For the vomiting he directs that small pieces of ice or frozen champagne should be given, and that a rectal injection shall be used night and morning, composed as follows:

℞ Borax, ʒiii;
Boiled water, Oii.
One-half of this to be used in each injection.

If, after this has been done for two days, no symptoms of amelioration ensue, surgical measures should be resorted to. The diet should be absolutely a liquid one, with rest in bed, small quantities of pure water or milk given frequently, and everything done to keep the patient in good condition for operative procedures.

THE TREATMENT OF URTICARIA.

In the *Journal de Médecine de Paris* for April 22, 1894, is an article upon this disease. The indications which are to be met in its treatment are the removal of the cause and of the symptoms. It is to be remembered that among the causal factors are a large number of vegetable substances and parasites, and that, in addition, fish, shell-fish, and similar articles of food may produce these symptoms. Among the important drugs which produce urticaria are antipyrin, arsenic, copaiba, chloral, salicylic acid, santonin, the iodides, bromides, and turpentine. Often these eruptions can be relieved by external applications, and of course the causative factor in the eruption should be removed. Certain dermatologists regard urticaria as a disorder of vaso-motor innervation, depending upon a diathesis, and have therefore based their treatment as follows: For vaso-motor disorders they administer sulphate of quinine in the dose of 4 grains twice a day, or 10 grains of ergotine divided in morning and night doses; or, again, 10 to 20 drops of tincture of belladonna during each day; or, again, they substitute for belladonna the sulphate of atropine in the dose of $\frac{1}{150}$ grain twice a day.

Brocq recommends the employment of ergotine and belladonna and quinine as follows:

℞ Hydrochlorate of quinine, gr. i;
Ergotine, gr. i;
Extract of belladonna, gr. ss;
Glycerin, q. s.
Make into one pill and administer 8 to 16 pills, giving 2 pills at a time.

For the urticarial diathesis a severe alimentary *régime* should be instituted. Red meats and similar substances should be avoided and only white meats taken. Heavy rich foods are also to be avoided. Should an arthritic diathesis be present, alkalies, such as bicarbonate of sodium or Vichy water should be used, or one of the mild purgative alkaline waters resorted to.

Should the urticaria be due to dyspepsia with constipation, the following prescription may be given:

℞ Benzonaphthol,
Powdered rhubarb,
Calcined magnesia, of each, gr. v.
Make into one cachet, and administer such a cachet half an hour before each meal.

Should diarrhœa be present, order:

℞ Betanaphthol,
Salicylate of bismuth,
Prepared chalk, of each, gr. v.
To be put into one cachet, which is to be taken after each meal.

Should nervous irritation be sufficient to prevent sleep, some mild hypnotic may be given,—such, for example, as a small dose of opium, or sulphonal in the dose of 8 grains. Should the nervous irritation be very great, as much as 30 grains may be given in a day; or, in other cases, cachets containing as much as 4 grains of chloralose may be given four times a day. Often, too, bromide of potassium, in moderate dose, with extract of valerian is useful. For the local treatment, lotions and powders are chiefly indicated. Baths are also useful. The patient is directed to take a bath of moderate temperature for a quarter of an hour. The bath contains one litre of vinegar, one litre of glycerin, and two drachms of corrosive sublimate. It should be taken in a porcelain or wooden tub. In relation to lotions there is much room for choice. Some recommend ether in the proportion of one-third, others

vinegar one-third, or, again, Cologne-water in the proportion of one-third, or the following prescription may be used as a lotion:

℞ Corrosive sublimate,
Chloride of ammonium, of each, gr. ii;
Aqua lauro cerasi, ʒiiss;
Distilled water, ʒviii.

Of the powders to be employed after the bath, we may use simple powdered starch, one-fourth of oxide of zinc, one-tenth of salicylate of bismuth, or one-fiftieth part of camphor. Of the salves, those which contain menthol or phenol are of most value, as, for example, the following prescription:

℞ Vaseline, ʒi;
Oxide of zinc, gr. xlv to gr. lxxv;
Menthol or phenol, gr. v.

THE ABSORPTION OF IRON.

MACALLUM (*Journ. of Phys.*, April, 1894) finds that inorganic iron is absorbed (in guinea-pigs) by the intestinal mucous membrane. Whatever iron salt was administered, whether the phosphate, chloride, sulphate, or "peptonate," when the dosé was not very large, the evidence of its absorption was very plain in the villi of the upper end of the small intestine, but in them only. When the dose was large, the presence of iron in the villi was observed far down the intestine, but the reaction for iron was less distinct the more remote the villus from the pylorus. With very large doses of the phosphate or "peptonate," the villi near the cæcum gave an intense reaction. It is suggested that the reason for this difference is that, when the dose of iron is small, and when consequently the quantity of iron in the chyme is small, it is wholly precipitated by the alkaline, biliary, and pancreatic secretions; as these three fluids do not at once and completely mingle, the iron is not at once precipitated, and consequently absorption goes on in the first few inches of the intestine. The acidity of a larger dose of iron salt may be sufficiently great to destroy the alkalinity of the chyme after admixture with the bile and pancreatic juice, and, when this is the case, the unprecipitated excess of iron salt will go on down the intestine and be absorbed lower down. When the oxide or the reduced metal is given, a certain quantity of the acid of the chyme is taken up in effecting their solution, and therefore in the intestine the alkalinity of the bile and pancreatic juice must go further in the precipitation of the iron. Speaking generally, the larger the amount of free acid in the chyme the greater must be the quantity of iron absorbed. Sulphides in the contents of the bowel will also precipitate the iron still in solution. On an ordinary diet, therefore, the extent of intestinal mucous membrane which absorbs iron must be, in proportion to that which does not, remarkably small. Macallum, however, thinks it possible that in anæmia there may be a diminution in the amount of the biliary and pancreatic secretions, a condition which, for the reason above stated, would prevent precipitation, and thus favor absorption. His grounds for stating that iron salts are absorbed —a fact which has been denied—are drawn from microscopical examination of the mucous membrane under various conditions. In well-fed guinea-pigs taking iron the intestinal mucous membrane, after treatment with alcohol, assumes, when treated with ammonium sulphide, a more or less dark color, due to the formation of sulphide of iron, which, under the microscope, is seen to be limited to the subepithelial portions of the tips of the villi. Here it is deposited in leucocytes which surround the end of the lacteal vessel. When the dose of iron is larger, or, apparently, when the administration is continued for a long time, the iron is present also in the epithelial cells themselves, and passes from them by a process of internal secretion into the plasma of the venules. These venules are the portal radicles, and leucocytes containing iron are found in capillaries of the liver, and the peripheral cells of the lobules contain iron. Similar leucocytes are found in the spleen. Beyond this point the iron was not traced, and the question whether it is ultimately assimilated and fixed as inorganic iron remains unsettled; but the research serves to prove that iron salts have not, as has been asserted, merely a stimulant action on the epithelial cells of the mucous membrane. Any stimulant action they may exert is a concomitant of their absorption. Though some of the subepithelial leucocytes of the villi appear thus to carry part of the absorbed iron into the general circulation, the more important agent in the transference of the inorganic iron from the villi to other parts of the body is the blood plasma.—*British Medical Journal*, May 5, 1894.

THE TREATMENT OF CHOREA.

L'Union Médicale for May 12, 1894, gives the following:

Intellectual and physical rest, with sulphur-water baths and bitter tonics, such as quinine

and arsenic for mild cases. In other instances which are more severe, great care should be taken as to the hygienic and gymnastic treatment of a patient, and if insomnia is marked, bromide of potassium should be given but not continued for a long time.

A useful prescription in these cases is,—

℞ Valerianate of zinc,
Extract of belladonna,
Subnitrate of bismuth, of each, gr. xv.

To be made into forty pills, 1 or 2 of which should be given three times a day.

If arsenic is indicated, it is well to employ the arsenate of sodium in the dose of $\frac{1}{20}$ to $\frac{1}{10}$ grain progressively increased. Sometimes good results follow from spraying the back of the neck with ether or chloride of methyl. If the case is a very grave one, from 15 to 30 grains of antipyrin may be given a day in fractional doses, and chloral resorted to to produce nervous quiet. It is also well if the patient is strong enough to give a cold douche morning and night, followed, after two or three minutes, by active friction to produce reaction. Should the case become exceedingly severe, inhalations of chloroform are used.

TREATMENT OF DYSMENORRHŒA.

DR. SCHWARZE (*Therapeutische Monatshefte*, May, 1894) discusses, first, dysmenorrhœas associated with pathological anteflexion and with retroflexion of the vaginal uterus, and with different forms of deficient development of the uterus; secondly, all dysmenorrhœas without recognizable anatomical change.

The first group have this in common, that they may all be referred to a deficient muscular development, to flabbiness or delicacy of the walls of the organ. He thinks that in stenoses of the external and internal os, it is the hypoplasia, not the stenosis, which is the chief factor. So, too, with pathological anteflexion and retroflexion, defective development, not change in position, plays the chief *rôle*.

In the case of girls in the period of development, general treatment of the frequently associated anæmia and chlorosis is to be employed, including internal treatment in addition to baths, and residence in the country or mountains. In obviating the pain during menstruation, rest and antipyrin, phenacetin, antifebrin, exalgin, and salicylate of sodium play a great *rôle*.

Frequently the pains disappear under this treatment, and frequently they do not, in spite of the fact that the anæmia is overcome and the patients become blooming. Ergot sometimes succeeds in such cases, but more often fails. Now the treatment becomes more difficult. It is necessary to mitigate the periodical pains with narcotics. So long as this can be done with codeine or cautious doses of opium, or with atropine or belladonna, there is nothing to be said against it. Frequently these are not sufficient; but beware of the use of morphine. It is least likely to induce a habit in those cases in which only the first menstruations are painful.

We possess, however, two agents not sufficiently appreciated. The first of these is the gymnastic, mechanical treatment of the disease, which was introduced by Thure-Brandt. It is applicable to non-inflammatory cases. The movements which Thure-Brandt recommends are (1) percussion of the loins; (2) rolling of the thigh; (3) with the patient in a standing position, the knees are bent and stretched against her apposition; (4) rolling of the feet; (5) separating the knees and leaning backwards. The movements are performed at home, if possible daily, at any rate daily for one week before menstruation. Favorable results follow this treatment. Schwarze asserts that patients who dance or ride horseback some days before menstruation have much less pain, or none at all.

But in well-developed, not anæmic women, who suffer violently from dysmenorrhœa, special gymnastics are not to the purpose. Here, in non-inflammatory cases, viburnum prunifolium gives brilliant results, which are not to be obtained with any other remedy, except morphine. Schwarze gives a teaspoonful of the fluid extract three times daily, beginning from five to seven days before menstruation.

Schwarze is opposed to local massage in the dysmenorrhœa of maidens, but thinks it is a powerful aid in sterile women. The simplest local measure is the introduction of a sound into the uterine cavity shortly before menstruation. In cases in which introduction of a sound gives transient improvement only, cure is not often obtained with bougies. Dilatation is best done several days in succession, a short time before menstruation.

Electricity he always recommends in severe cases before dilatation. The most satisfactory way is with the galvanic current, with the negative pole, an aluminum sound, introduced into the uterus, and the positive pole, in the form of a flat electrode as large as possible, laid upon the abdomen. A current strength of fifty

to one hundred and fifty milliampères is employed.

In cases which resist all treatment for years, castration is indicated. But it may be that the nervous disturbances have reached so high a degree that separation will not occur. In other cases the dysmenorrhœa is only one manifestation of a neuropathic condition.

Finally, Brunnberg, of Upsala, has treated twenty-four cases of severe dysmenorrhœa with hypnotism, and cured fourteen and improved seven.

SERUM TREATMENT OF DIPHTHERIA.

EHRLICH, KOSSEL, and WASSERMANN (*Deut. Med. Woch.*, April 19, 1894) relate their experiences in continuation of the researches of Behring in Professor Koch's institute. The serum was obtained from goats artificially made immune; the milk from these animals also contains the protective substances. The immunity was induced by giving them increasing doses of dead diphtheria cultures. The authors adopt the method of ascertaining the amount of antitoxines present by means of neutralization, making use of a virus equivalent to 3 in 1000 grammes body-weight. The immunity-producing unit is such that .1 cubic centimetre suffices to neutralize .8 of the virus. The authors have treated two hundred and twenty unselected cases of diphtheria in children with the curative serum. The injections were never known to be harmful. At first a single injection equivalent to one hundred and thirty to two hundred immunity units was used, but later the dose was repeated in severe cases. Of the two hundred and twenty cases, sixty-seven were tracheotomized, the mortality being 44.9 per cent. Among the remaining one hundred and fifty-three, the mortality was only 23.6 per cent. In six treated on the first day, there was no death, and in sixty-six treated on the second day there were recoveries amounting to ninety-seven per cent., whereas as in twenty-three treated on the fifth day, the percentage of recoveries fell to 56.5 per cent. The steady decrease in the number of recoveries observed here, according to the time when the patient was first treated, is not seen under any method of treatment, whereas it is in keeping with the experimental evidence. In one-half the fatal cases, the disease was so advanced as to make recovery almost out of the question. In the other half, perhaps, several might have been saved if sufficient serum had been at hand to give several doses. Some children showed great improvement in the first two days, but eventually became slowly worse, and died ten to fourteen days later of nephritis and especially of cardiac failure. With larger doses an effect on the temperature and pulse, critical in character, was mostly observed. Following their experience, the authors hope that the number of cases of nephritis and paralysis may be lessened. They conclude that (1) the serum should be used as soon as possible; (2) in slight cases two hundred units, but in severe as well as tracheotomized cases four hundred units should be given; and (3) the treatment should be repeated on the same or the following day, according to the severity of the symptoms; the total amount given may be five hundred to one thousand or fifteen hundred units. These figures apply only to the serum used by the authors.—*British Medical Journal*, May 5, 1894.

PHENACETIN IN RHEUMATISM.

According to the *Journal de Mèdecine de Paris* for April 29, 1894, useful results are obtained in cases of acute rheumatism by applying phenacetin externally to the painful parts. The following prescription may be used:

℞ Phenacetin, gr. lxxv;
Lanolin, ʒvi;
Olive oil, a sufficient quantity.
To be rubbed about the inflamed part.

Or,

℞ Phenacetin, gr. lxxv;
Alcohol, Oii.

In this solution dip compresses and apply to the painful parts.

TREATMENT OF DIABETES MELLITUS WITH SALICYLATE OF SODIUM.

DR. ADOLF MICHAELIS (*Therapeutische Monatshefte*, May, 1894) refers to others who have reported the use of salicylate of sodium in diabetes, and then reports a case.

The man was fifty-eight years old, of strong constitution, excellent appetite, and good digestion. Diabetes was discovered in 1877, and was possibly due to an injury to the back. Upon a diet that was not strict, which was undertaken only during a year's cure at Carlsbad, the percentage of sugar varied between one and four, the specific gravity from 1020 to 1036. Albumin, acetone or diacetic acid were never recognized. From the middle of September to November 23, 1890, he took daily 8 to 10 grains of salicylic acid for rheumatic disturbances. At the end of that time he developed a series of gastric and cerebral symptoms proved to be due to salicylic-acid poisoning. The urine was free from sugar; specific gravity, 1016. The salicylic acid was stopped, and the sugar

promptly reappeared, and varied, as before, according to diet, between one and four per cent. The patient was not under examination while taking the salicylic acid, so that one cannot say how long sugar had been absent.

WALNUT LEAVES IN SCROFULA.

G. P. RODIONOFF, of Moscow (*Meditzinskoie Obozrenie*, No 2, 1894), on the ground of extensive observations of five years' duration, recommends the old-fashioned popular treatment of scrofula by a prolonged course of a decoction of walnut leaves (*Folia nucis juglandis*), which should be used both internally and externally in the form of local washes and general baths, made two or three times weekly. Little children should be given half a cupful, older ones a cupful or even a "jugful" of the "tea" every morning and evening. The leaves prove especially beneficial in cases of itching, eruptions, and enlarged glands. In the author's hands the treatment, the duration of which varied from two months to two years, failed only in a few exceptionally refractory cases, and in impatient and unmanageable children who did not take the "tea" in a regular manner.—*British Medical Journal*, April 28, 1894.

A DEATH FROM BROMIDE OF ETHYL.

L'Union Médicale, May 8, 1894, states that MENDOZA reports a case of death following anæsthesia produced by bromide of ethyl. Ten seconds after the application of the compress to the face the patient's color became cyanotic and the veins turgescent, the eyes were moved convulsively, the pupils were widely dilated. Rhythmic tractions of the tongue and artificial respirations were practised thirty minutes and active flagellations resorted to without effect. The cause of death seemed to be respiratory failure.

THE TREATMENT OF NOCTURNAL ENURESIS.

DONALD MACALISTER, in the *Practitioner* for May, 1894, writes of this subject. He points out that patients suffering from this troublesome affection, which has proved rebellious to the ordinary methods of treatment, come not infrequently under the notice of the physician at the age of puberty. During childhood the complaint has been tolerated, and simple means of relief, disciplinary and other, have alone been tried. A little perfunctory medication, or, it may be, such surgical treatment as circumcision or "cold sounding," is all that has been attempted, and yet the enuresis persists. As the little patient advances in age the disability becomes more urgent; and when the time comes for sending him or her to a boarding-school or away from home, the parents grow increasingly anxious to have the habit broken.

MacAlister in such cases, having first ascertained that no condition requiring surgical interference exists, uses atropine in doses gradually increased to the full limit of tolerance, and in no instance, out of some twenty cases, has he failed to bring about a cure. The following history illustrates the method adopted: A youth of fourteen had passed the examination for admission to a large public school, which he was to join in three months. From early childhood he had been accustomed to "wet the bed" twice or thrice a week. He had been treated from time to time by several practitioners, with ergot, tincture of belladonna in 10-minim doses, Parish's syrup, bromides, cauterization of the urethra with solution of nitrate of silver, blistering of the perineum, and ultimately circumcision. Each new treatment checked the enuresis for a time, but soon it recurred; and when coming under observation first it was as troublesome as ever. The housemaster had informed the parents that he could not receive a boarder so affected, and they were in despair lest his infirmity should prevent his admission to the school and so spoil his career. They were eager to try anything in reason for his relief, and consequently carried out the directions given with praiseworthy care. The prescription ran thus:

℞ Liquoris atropinæ sulphatis, ʒiss;
Liquoris strychninæ hydrochloratis, ♏xlv;
Syrupi aurantii, ad ʒi.

Sig.—5 drops of the syrup to be taken in a tablespoonful of water at 9 P.M.; to be increased as directed.

The directions were: That no drink should be taken after 6 P.M., that the drops should be taken at 9, that the boy should go to bed after emptying the bladder at 10; that he should be waked to pass water at 12 when the parents retired, and again at 6 A.M. when the servants rose. 5 drops of the syrup were to be taken nightly for three nights, 10 drops for the next three, 15 for the next three, and so on until in the fourth week 30 drops were taken. During this time no "mishap" occurred; there was considerable dilatation of the pupils, and some dryness of the tongue and throat, but no untoward symptom. The dose was continued

at 30 drops for a week, when enuresis again took place. The dose was again increased every three nights by five drops at a time until 50 drops (representing about $\frac{1}{10}$ grain of sulphate of atropine) were being taken nightly. Accommodation at this time was so affected that the boy could not see to write, though he was perfectly well in other respects. As at this point he had to enter for a two days' written examination, a solution of salicylate of eserine was instilled into the eyes, without stopping the atropine. This enabled him to see sufficiently well to take the examination and to pass with credit. As he and his parents had from previous experience been impressed with the notion that the third week of treatment was a critical one, and that at the end of six weeks a second relapse was to be feared, they were directed to continue increasing the dose up to 60 drops, and to continue this dose for a week. No "mishap," however, occurred, and the dose was then decreased ten drops every three nights, until, after nine weeks of treatment, it was discontinued; the enuresis never returned.

In other cases the writer has used gradually-increasing doses of the tincture of belladonna; but the uncertain strength of this preparation, and the large quantity that has to be taken to obtain its full physiological effect, have caused him to fall back upon sulphate of atropine as more eligible in every respect. In one patient, a girl of seventeen, he pushed the dosage up to 25 minims of the solution nightly, with ultimate success. In no instance have the secondary effects been at all alarming, or, indeed, more than slightly inconvenient. The patients themselves are usually so keenly anxious to be relieved of their infirmity that the inconveniences are cheerfully borne, when it is explained that they will pass off entirely when the medicine is stopped. Cerebral or cardiac disturbances have not been observed.

The secret of success in obstinate cases lies in courageous overdosing. If ordinary means have failed, atropine will not succeed, unless it is pushed to the utmost. The well-known tolerance of the drug by young patients should give the physician confidence in putting the subjects of enuresis under its full influence. The addition of strychnine to the mixture probably diminishes the depressant effect of large doses of atropine, and increases the sensitiveness of the vesical centres to reflexes from the bladder-walls. Some patients have said that, whereas they had been accustomed to wake only to find that the bladder had emptied itself spontaneously, they now were able to get up in time to pass water.

A NEW METHOD OF USING COCAINE FOR LOCAL ANÆSTHESIA.

KROGIUS (*Centralbl. f. Chir.*, No. 11, 1894) describes a new method of producing cocaine analgesia, which is based on the fact that when a solution of this agent is injected into the subcutaneous tissue near to a nerve-trunk it causes loss of sensation over a large zone corresponding to the peripheral distribution of this nerve. In order to reach the selected nerve-trunk with certainty, and to apply the cocaine to several of its branches at the same time, the author, in injecting the subcutaneous tissue, passes his needle across the long axis of the limb, and as the needle is thrust along the solution is gradually discharged. An injection made in this way across the root of a finger will, in the course of ten minutes, result in analgesia of the whole digit,—not of the skin only, but also of the tendons, the periosteum, and all the deep structures. If one or two injections be made transversely near the wrist, a considerable extent of the palm of the hand may be thus rendered analgesic. The sensibility of the ulnar side of the hand as far as the roots of the last two fingers may, it is stated, be abolished by injecting a solution of cocaine over the ulnar nerve at the back of the elbow. By injecting over both supraorbital notches, analgesia may be produced in the whole of the middle portion of the forehead. The analgesia caused by this method of using cocaine attains its greatest intensity and extent from five to ten minutes after the injection, and is maintained for a quarter of an hour or even longer. The author injects only a weak (two-per-cent.) solution of cocaine, and keeps the patient recumbent for at least a quarter of an hour after the operation. This method has been practised with success at Helsingfors in two hundred minor operations, such as amputation of the fingers and toes, excision of palmar fascia, and phimosis.—*British Medical Journal*, May 26, 1894.

RESECTION OF INGUINAL ARTIFICIAL ANUS.

MR. HERBERT ALLINGHAM showed a patient who had recovered from a previous operation, but all the motions were passing by the inguinal opening, and the spur about the opening was getting more prominent, in spite of an attempt to reduce it daily by pressure with the finger. This being the case, it appeared to him useless to attempt any plastic operation to close the artificial anus. The patient having been anæsthetized, a sponge was first put into the artificial anus. The skin around the artifi-

cial anus was then divided, and the peritoneum opened as soon as the mass was entirely freed from the skin around; the anus and gut were next pulled well out of the abdomen. To do this it was necessary to separate some omentum from the gut, it having become adherent to it as a result of the fixing up of the gut to the opening in the belly-wall at the first operation. The sigmoid flexure having a fairly long mesentery, it was easily drawn well out of the belly. The abdominal cavity being well protected by sponges, two drainage-tubes were passed through the mesentery and secured with clip forceps around the gut about three inches above and below the artificial anus. About four inches of the gut with the anal opening in it were then cut away, a piece of the mesentery being also divided. A continuous silk suture was used to bring the mucous membrane of the upper end of the gut to the mucous membrane of the lower end of the divided gut. This suture was passed from one to the other very loosely all around. Then a Mayo Robson's bobbin was inserted between the loose stitches into both ends of the divided gut, and when well inserted the continuous stitch was drawn up tight, so bringing the mucous membrane of both ends of the gut firmly together over the bobbin, the bobbin acting as an excellent frame to keep the ends of the bowel together and also to allow of the careful insertion of Lembert's sutures, uniting the peritoneal surface of the upper to the lower end of the divided gut. A few sutures were then used to unite the cut in the mesentery. The bowel was then washed and returned, the abdominal wound being united with silkworm-gut suture in the usual manner.

It is satisfactory to note that the patient has made a perfect recovery and has left the hospital.—*Medical Press and Circular*, May 16, 1894.

THE TREATMENT OF LEAD-POISONING BY MONOSULPHATE OF SODIUM.

The *Journal de Médecine de Paris* for April 29, 1894, points out that PEYRON in 1891 stated that the monosulphate of sodium is an excellent drug to antidote the effects of acute lead-poisoning, for the reason that it aids very extraordinarily in the elimination of the lead from the organism. The experiments carried out by the investigator upon dogs proved this point beyond doubt.

MYXŒDEMA AND THYROID EXTRACT.

CRARY, of New York, writes of this topic in the *American Journal of the Medical Sciences* for April, 1894, and concludes that the effects of thyroid administration may be summed up as follows:

Increased metabolism, shown by,—

1. Elevation of temperature.
2. Increased appetite, with more complete absorption of nitrogenous foods.
3. Loss of weight, with nitrogen excreted in excess of that taken in the food.
4. Growth of skeleton in the very young.
5. Marked improvement in body nutrition generally.
6. Increased activity of mucous membranes, skin, and kidneys.

The rheumatic symptoms and the anæmia are not only not relieved, but are most frequently aggravated.

THE TREATMENT OF HABITUAL CONSTIPATION IN THE NEW-BORN.

The *Journal de Médecine de Paris* for April 22, 1894, gives the following directions for treating this condition:

Regulate the nursing; see that it is done every two or three hours. If the child is not nourished at the breast it may be necessary to feed it from the bottle, and under these circumstances cow's milk should be chosen which is very rich in cream. A small rectal injection of warm water may be given morning and night at the same hour, and if this is unsuccessful in producing a movement a small suppository of coca butter may be given, or a few drops of glycerin and water injected. It is also useful to use general massage over the abdomen with camphorated oil. A warm bath should be given every day, and the child should get as much fresh air as possible.

In somewhat older children care should be taken that the diet is regulated and that sweets are avoided, while vegetables, such as beans, prunes, and similar substances, are used. Injections or glycerin suppositories may be used once a day. Before each meal a teaspoonful of a syrup composed as follows may be given:

℞ Syrup of rhubarb,
Syrup of gentian, of each, ℥iv.

Or in the morning a teaspoonful of the following prescription:

℞ Castor oil,
Syrup of orange-flowers, of each, ℥vi.
Shake well.

In addition, abdominal massage, baths, and out-door life are very useful.

[The disadvantage of employing either rhubarb or castor oil is the fact that they both tend to produce constipation after making the bowels act. Cascara sagrada cordial would be a much better prescription, in the dose of from 1 to 3 teaspoonfuls.—ED.]

In still older children, in addition to regulating the diet, the child should be taught to eat slowly and masticate its food thoroughly, and in the morning to take a teaspoonful of the following mixture:

℞ Calcined magnesia,
Sulphur,
Cream of tartar, of each, ʒvi.
Oil of anise, ♏xv.

Recourse may also be had to rectal injections and glycerin suppositories, or the following prescription may be given by rectal injection:

℞ Infusion of senna leaves, gr. lxxv to gr. cl;
Water, ℥iv to ℥viii.

Should there evidently be marked atony of the liver, once or twice a week a powder composed of calomel and scammony, of each 4 to 6 grains in a small cachet or in syrup, may be used. In still other cases, before the evening meal, a pilule containing $\frac{1}{40}$ to $\frac{1}{20}$ grain of podophyllin may be administered. Where there is insufficient intestinal secretion, citrate of magnesium may be given once a week, or a small wineglassful of some purgative mineral water. Should there be inactivity of the intestine, 8 to 12 drops of the following prescription may be used:

℞ Tincture of nux vomica, ♏xxx;
Tincture of belladonna,
Fluid extract of cascara sagrada, of each, ʒii.

Hydrotherapy, exercise, massage, and electricity with faradization of the abdominal walls and the use of the continuous electric current are also valuable therapeutic aids. Should there be evidences of intestinal obstruction, with stercoraceous vomiting, with constipation, meteorism, and a cylindrical tumor showing obstruction, the child should have a hot bath, after this copious intestinal irrigation of hot boric-acid solution, to which is added 1 or 2 teaspoonfuls of glycerin, and if the obstruction does not seem to be severe, 2 to 6 drachms of castor oil. A liquid diet, consisting chiefly of milk flavored with coffee, is to be used.

COMPOUND TINCTURE OF COAL-TAR.

In the *American Journal of the Medical Sciences* for April, 1894, DUHRING writes a paper on compound tincture of coal-tar.

Summing up the result of his investigations, we may conclude,—

1. That the best tincture of coal-tar is made with the aid of tincture of quillaia.

2. That the strength of the tincture of quillaia should be 1 to 4, with ninety-five per cent. alcohol.

3. That the coal-tar (1 part) should be digested with the tincture of quillaia (6 parts), with frequent agitation, for not less than eight days, and preferably for a longer period, and finally filtered.

4. The resultant product is a brown-black, clear tincture, which, upon the addition of water, forms a cleanly yellowish emulsion, the color and certain other characters varying with the kind of coal-tar employed.

5. The tincture is stimulating and is prescribed usually largely diluted, with from 10 to 60 parts of water, as a wash, and is useful where tar is indicated, as in certain forms of eczema, psoriasis, pruritus, and other inflammatory diseases of the skin. It is often more useful when employed weak than strong.

6. This preparation, which may be designated as "compound tincture of coal-tar," takes the place of several similarly composed proprietary preparations, known as "liquor carbonis detergens" and "coal-tar saponine."

PRESCRIPTIONS.

For whooping-cough in an infant:

℞ Sulphonal, gr i;
Creosoti, ♏ii;
Syrupi tolutani,
Aquæ, of each, ℥ii.
Misce et fiat mistura.
2 teaspoonfuls to be given every two hours.

For amenorrhœa:

℞ Hydrargyri perchloridi, gr. ¼;
Sodii arseniatis, gr. i;
Ferri sulphatis exsiccatæ, gr. xxx;
Potassii carbonatis, gr. xv;
Extracti nucis vomicæ, gr. v.
Misce et divide in pilulas xxx.
1 pill to be taken before each meal.

For bronchorrhœa:

℞ Copaiba, ʒiii;
Spiritus chloroformi, ʒi;
Mucilaginis acaciæ, ʒvii;
Liquoris potassæ, ʒi;
Aquæ cinnamomi, q. s. ad ℥viii.
Misce et fiat mistura.
An eighth part to be taken three times daily.

For bronchitic asthma:

℞ Extracti stramonii, gr. ⅛;
Potassii iodidi, gr. v;
Ammonii carbonatis, gr. iv;
Tincturæ lobeliæ ætheræ, ♏v;
Aquæ chloroformi, q. s. ad ℥ss.
Misce et fiat mistura.
A tablespoonful every four to six hours.

Paste for eczema:

℞ Acidi salicylici, ʒi;
Zinci oxidi, ʒiii;
Pulveris amyli, ʒiv;
Adipis lanæ hydrosi, ʒi. M.
Fiat unguentum.
To be applied daily.

—*Practitioner*, June, 1894.

POISONING BY GUAIACOL.

FRIEDENWALD writes in the *Maryland Medical Journal* for May 12, 1894, that the external application of guaiacol for the reduction of febrile conditions has been given a prominent place in recent medical journalism. It is important, therefore, to direct attention to the toxic symptoms in the first fatal case of guaiacol-poisoning.

Professor Oscar Wyss, of Zurich, reports in the *Deutsche Medicinische Wochenschrift* of March 28, 1894, the case of a girl nine years of age, who had been accidentally given 5 cubic centimetres (75 drops) of guaiacol. In a short time she became unconscious; the conjunctivæ became injected, the corneal reflexes diminished, and the pupils no longer reacted to light; there were frequent attempts at vomiting, and the saliva flowed from the mouth in large quantities. The pulse became rapid, the sensibility of the skin much diminished. Finally, the patient began to vomit; the physician detected the odor of guaiacol. The stomach was washed out, but she did not rally. The cyanosis gradually diminished, and instead of it a deadly pallor was observed; the respiration became frequent. Three and a half hours after the guaiacol had been swallowed the patient passed one hundred cubic centimetres of brownish-red urine.

The spleen and liver soon enlarged, and the temperature fell to 35.5° C. (96° F.), and small hemorrhages were observed upon the skin of the arms and legs. The urine contained albumin, blood, and casts, and Ehrlich's carbolic-acid test was positive.

Jaundice soon appeared, the stupor increased, and the patient died on the third day.

The autopsy revealed an acute gastritis and enteritis, parenchymatous degeneration of the liver, acute hemorrhagic nephritis, parenchymatous degeneration of the heart-muscle, and ecchymoses in the pleura, peritoneum, endocardium, and pericardium; the spleen was much enlarged.

Kobert, in his text-book on "Intoxicationen," points out that after 1-gramme (15 drops) doses of guaiacol slight appearances of poisoning may supervene. These are characterized by a burning feeling in the stomach, nausea, etc. In one case, in which fifteen grammes (3⅘ drachms) were accidentally taken by a patient in the Dorpat Clinic, the stomach was immediately washed out and the patient was rescued. However, unconsciousness set in, the pupils became contracted, the breathing irregular, and the intensely dark appearance of the urine was very noticeable.

SODIUM NITRITE AS A THERAPEUTIC AGENT.

In a valuable paper on this subject in the *Practitioner* for May, 1894, SHARP reaches the following conclusions:

Sodium nitrite, being stable, may replace the less stable amyl and ethyl nitrites. It dilates all the arterioles rapidly, and so rapidly relieves the heart. Disagreeable symptoms may be overcome by prescribing it with ammonia water or spirit of chloroform and small doses of morphine. It is most useful in anginal affections and in irregular heart action. To obtain most benefit from its use it should be continued some time after all symptoms have passed off; by this means the heart is able to regain its tone and so to repair itself. The maximum dose is 4 or, at most, 5 grains, and generally 1 or 2 grains are enough. Graves's disease would appear to be aggravated by it. Bronchitis and asthma are not, in Sharp's experience, benefited by its use.

PEPSIN LAVEMENTS IN DYSENTERY.

Pepsin has been applied to very many of the diseases of the nosology, yet it remained for DR. SUMMERS, of Waukesha, Wis., to discover that it possesses a most satisfactory therapeutic action in dysentery. He washes out the bowel with a strong solution of pepsin (½ ounce to 6 ounces of warm water) every three hours, which act, he declares, "clears off the mucous surface effectually." He next employs a soothing injection, such as laudanum and starch, as hot as can be borne. He declares that after two or three washings and injections the patient experiences great relief, and healthy action is at

once set up, when, if constitutional conditions receive due consideration, rapid healing follows.—*Medical Age*, May 10, 1894.

RECTAL ULCERATIONS.

SPECHT has an article on this subject in the *Northwestern Lancet* for May 1, 1894.

In describing the treatment of rectal ulcerations, the author divides them into two classes: first, those which come under the influence of the sphincter area; and, second, those above it in the rectum. The former are generally met with in the form of painful fissures and excoriations, the pain being most pronounced during the passage of the fæces over the sore, or some little time after when produced by spasm. In the former variety the patient should come daily to the office for treatment, with, in some cases, a weak solution of silver nitrate, in others a 30- to 60-grain solution, up to even a saturated solution for caustic effect. Sometimes a mixture of equal parts of carbolic acid and tincture of iodine is useful. Most cases are easily cured by this plan of treatment, if the bowels are kept in as liquid a condition as possible, the patient having at least two or three passages a day, thereby causing less irritation of the sore. Another good local treatment in some of these cases is to lay a pledget of absorbent cotton, dusted with iodoform, in the bottom of the sore, and change it daily.

When this fails, and we have a persistent, irritable ulcer, division of the sphincter is the next procedure we would think of, and, as Kelsey says in regard to this operation, we do not need to cut entirely through the sphincter; still, we should go deep enough to produce a certain amount of laxity about the ulcer.

And now we come to the treatment of ulcers farther up the rectum, the ones the most tedious and difficult to heal.

Before attempting to treat this class of cases the writer obtains the co-operation of the patient by consenting to absolute rest in bed and in the horizontal position; no sitting up in bed or about the room or on a lounge, but in bed, with the hips lower than the shoulders, if possible.

To show the value of this position in bed in the cure of the latter class of rectal ulcerations, an ulcer of the leg is a fair example, where the veins are in a varicosed condition, as they are apt to be likewise in the rectum. In such an ulcer on a leg in that condition we all know how difficult it is to heal it unless we bandage the limb or place it in a horizontal position; washes, powders, and ointments are without avail unless we do this. So it is with the rectum. Although we cannot bandage it, we can do the better way, and that is to place the rectum, like the leg, in a horizontal position. We thus relieve the enlargement of the veins, and thereby allow a quicker and more abundant supply of the life-giving current of arterial blood; still more, the current is aided by giving 2 or 3 grains of opium a day internally. Opium is a good capillary stimulant, and thereby a great factor in the healing of sores. We can assist still more by giving a highly nutritious diet, mostly liquid, however, with the exception, possibly, of bread and crackers. Add to this the food tonics, cod-liver oil, iron, and strychnine, and you are certainly assisting nature to the utmost.

The opium aids the patient to rest more contentedly in bed, and although it binds up the bowels, they naturally under this absorbable diet do not move under two or three days, and what harm if we prolong it a day or two longer with the opium? Of course the bowels should not be locked up longer than the time when uneasiness is expressed by the patient, but we can then, by leaving off the opium for a period, and by the administration of oft-repeated doses in conjunction with an enema, soon have a comfortable passage. A good local medicine, and the one with which the author has had the best success, is a mixture of aristol and ichthyol made into an ointment and applied with an ointment applicator, or more convenient for the patient's use is to have the medicine made into suitable suppositories.

THE BEST TREATMENT OF HEMORRHOIDS.

STEVENS contributes a paper on this subject to the *Cincinnati Lancet and Clinic* for May 12, 1894. He thinks that internal hemorrhoidal tumors are best treated by direct removal. There are several methods proposed for the accomplishment of this. With the idea before us that the practitioner is to treat his cases without special preparation, because he does not see them often, the best method is that by ligature. Its advantages are that it is certain, and, if properly performed, safe; its disadvantages are mainly two. Sometimes, but not always, more or less distress, sometimes great pain even, is felt for a few days, and after this operation a patient is confined to bed some days.

The only instruments necessary are a pair of forceps, a pair of scissors, and a strong ligature. The improved method of Allingham is the one to employ. This contemplates the partial dis-

section of the base of the tumor towards the vessels which enter it from above. The operation should be done under an anæsthetic, with the sphincter stretched. The ligature is tied in the groove made by dissection around the pedicle thus formed and cut short. It comes away in about a week, and at the end of a second week the patient is usually at liberty. But before deciding upon this latter point, personally examine the former sites of the tumors. All patients do not get well rapidly; their cicatrizing power is feeble.

If the cases seen by the practitioner are sufficiently numerous to justify him in providing himself with the necessary instruments, he will find the clamp and cautery method of treatment an ideal one, and it has not been intended to prefer the ligature to it without some qualification of the statement of preference. While not so simple of performance, it is followed by less distress, and recovery is usually more speedy after it than after the ligature. The surgeon who permits his patients to walk out on the fourth day, however, as has been reported, does not decide for their best interest. A week or ten days should elapse, unless an examination shows the wounds healed. If resorted to, two or three precautions are best heeded. Do not use it on tumors high up in the rectum. Open the clamp slowly, and if there is any tendency to bleed, screw up the clamp and again apply the cautery. The cautery is sufficiently hot when dull red, and the part of the stump to which particular attention should be paid in applying the cautery is that farthest from the operator,—*i.e.*, where the vessels enter.

Before either operation see that the bowels are thoroughly emptied, and after it introduce an opium suppository.

There are one or two other methods advised, but they are not all that could be desired. One of them, called after the name of an eminent English surgeon, consisting in excision of the "whole of the pile-producing areas," deserves to be forgotten, not because it is not simple, but because it is not safe.

A form of hemorrhoidal disease characterized by sessile granulations which bleed easily is best treated by the very old method of applying nitric acid. Introduce a speculum, dry the parts with gauze, and touch the whole granular surface again and again with a bit of cotton moistened with the acid, but containing so little that it will not run over the parts not diseased.

Lastly, before beginning any treatment, look out for complications. Especially in women should the pelvic organs other than the rectum be examined. In children examine the urinary organs.

THE USE OF GLYCERIN IN HEPATIC COLIC.

L'Union Médicale for May 8, 1894, states that FERRAND reports the favorable results obtained by him in the treatment of hepatic colic by glycerin. The glycerin is administered by the stomach, and he believes is rapidly taken to the hepatic vessels. He believes it exercises a distinct cholagogue influence and tends to prevent hepatic colic. Should an attack of colic appear, a relatively large dose—namely, from ½ to 1 ounce of glycerin—should be administered. Ordinarily 1 to 3 drachms of glycerin each day, taken with some alkaline water, is quite sufficient to prevent future attacks.

AN OINTMENT FOR RHEUMATIC JOINTS.

The *Journal de Médecine de Paris* for May 6, 1894, states that BOURGET (of Lausanne) uses the following prescription about inflamed rheumatic joints:

℞ Salicylic acid, ʒiii;
Lanolin, ʒiii;
Oil of turpentine, ʒiii;
Lard, ʒiii.

On the application of this salve, Bourget claims that the pain is rapidly diminished, and he also thinks that a sufficient quantity of the salicylic acid is absorbed to produce a therapeutic influence.

THE TREATMENT OF DIPHTHERIA.

The *New York Medical Journal* for June 9, 1894, discusses this subject editorially by taking for its text an article in the *Journal des Sciences Médicales de Lille* for February 10, in which there is an analytical review, by DR. G. LEMIÈRE, of various recent contributions to the periodical literature of the treatment of diphtheria. The writer begins with the self-evident statement that the number of new methods which are vaunted from time to time marks a lack of any really efficacious treatment of the disease, although there are many of these methods which, if we may believe their authors, produce marvellous results. He thus proceeds to summarize the treatments relied on by various writers whose publications he takes into account. Hübner, he says, paints the affected part two or three times a day, according to the

severity of the case, with tincture of chloride of iron diluted with from one to five times its bulk of water; then he washes the throat with lime-water and applies externally iced compresses, together with pieces of ice. Theoretically, tincture of chloride of iron is as powerfully antiseptic as corrosive sublimate, in so far as the micro-organisms of diphtheria are concerned; according to Loeffler, it kills them instantly in a solution of 1 to 125. Moreover, its use does not involve any danger of poisoning. In fifty-two cases treated in this way, only twice did death result, and in the cases of recovery the gravity of the disease was such in six of them that the author does not hesitate to conclude that death would have supervened under any other treatment. Rosenthal gives chloride of iron internally, in a two-per-cent. solution, with the addition of glycerin, from a teaspoonful to a dessertspoonful every hour, day and night. He thinks the measure unfailing in preventing the angina from extending to the larynx. The temperature falls within twenty-four hours, the pulse becomes normal, the general condition is good, the pain is diminished, and the appetite is increased. In seventy-nine cases thus treated, only seven children died. Braun also uses sesquichloride of iron, but he is of the opinion that internal treatment alone is not enough. In order to destroy the false membranes more surely and more rapidly, we should not employ a solution, but an ointment, consisting of ten parts of sesquichloride of iron and twenty parts of lanolin ointment. Two applications in the course of the day often suffice, but occasionally three are necessary. Amelioration commonly shows itself within the first twenty-four hours, and at the end of three days the disease is jugulated. While with the ordinary methods of treatment he had observed forty per cent. of deaths, he witnessed only a few with this new method.

Hornig paints the throat two or three times a day with a thirty-per-cent. watery solution of pyoktanin, and then directs the patient to take a drink at once, but not to gargle. In children it is well to avoid as much as possible allowing them to expectorate after the painting, so they should be left in bed and not carried in the arms, with the head low and the legs raised, which favors the expulsion of the pyoktanin and hinders its absorption. The drug acts slowly and counteracts the poison already formed in the system. When the disease invades the nasal passages, he applies cotton tampons imbued with the same solution. He reports one hundred and forty cases thus treated; one hundred and ten observed by himself terminated favorably.

Tullé touches the false membrane every three hours with cotton tampons impregnated with a 1-to-500 solution of corrosive sublimate slightly acidulated with tartaric acid. He remarks that it is useless to seek to remove the false membrane, for it becomes detached spontaneously on the third or fourth day. At the same time he administers regularly every half-hour $\frac{1}{10}$ grain of calomel, a grain of sodium bicarbonate, and $\frac{1}{20}$ grain of ipecac until an abundant action of the bowels is produced, and thereafter repeats the dose every two hours. Besides, he gives quinine sulphate, calcium chloride, calcium citrate, and iodide of iron, in varying proportion, according to the patient's age. With this treatment he reports the loss of only two children out of thirty-three.

Pilière sprays the pharynx every two hours during the day and every three hours at night with a 1-to-500 solution of corrosive sublimate in children over two years old, and with a 1-to-1000 solution in those that are younger. He has never observed any symptoms of mercurial poisoning. He raises the pharyngeal false membranes after touching them with a tampon of absorbent cotton soaked in a 1-to-30 solution of nitrate of silver. Out of ninety-eight cases, in six of which tracheotomy was required, ninety-four ended in recovery.

Wissing employs inhalations of turpentine. He causes water to be boiled day and night in the sick-room, and adds turpentine to the water, using about six ounces in the course of a day. He also makes the patient inhale the mixed vapor directly, and says that in thirty-six hours the false membrane disappears and that poisoning never occurs. Flahaut paints the false membrane every hour or two with petroleum, taking care not to use enough of the liquid for it to trickle into the larynx. Immediately after this procedure he removes the false membrane, which seems to have become detached and dissolved under the action of the petroleum. Forty cases thus treated all terminated favorably, while in the same epidemic thirty cases treated by him according to the ordinary methods resulted in twenty-one recoveries and nine deaths.

A PRESCRIPTION FOR HEPATIC COLIC.

The *Journal de Médecine de Paris* for May 6, 1894, recommends that poultices containing medicinal ingredients be employed, as,—

℞ Turpentine, ʒiii;
Chloroform, ʒiii;
Laudanum, ʒvi.
This should be applied over the liver.

Or that a compress of flannel wrung in water and medicated with 10 or 20 drops of chloroform be applied in its place. Every half-hour the following mixture may be given:

℞ Antipyrin, gr. vii to gr. xv;
Chloroform water, ℥i;
Cinnamon water, ʒiii;
Hoffmann's anodyne, ʒi;
Tincture of belladonna, gtt. x;
Tincture of orange, ʒii.
To be taken at a dose.

If this mixture be vomited, the patient may be given by inhalation a little ether or chloroform, and the following injection administered by the rectum:

℞ Chloral, gr. vii to gr. xv;
Wine of opium, gtt. i to gtt. iv;
Distilled water, ℥i.

A tenth to a quarter of a grain of hydrochlorate of morphine should be given hypodermically. In the course of an hour a small glass of milk, to which has been added two to four drachms of oil or glycerin, may be added, which should be followed in turn by a full purgative dose of castor oil. Between the attacks it is well to administer full doses of bicarbonate of sodium, to order bitter tonics, and to give a mixture containing ether and turpentine, which are supposed to exercise antilithic effects. A useful prescription to take in the morning early is one composed of sublimed sulphur, cream of tartar, magnesia, of each, six drachms; oil of anise, fifteen drops. Or small pills of podophyllin containing one twelfth to one-eighth of a grain may be administered. Large rectal injections of cold water are also of value. Twice a week it is well to give one to two ounces of olive oil flavored with some peppermint for the purpose of aiding in the expulsion of any small stones. The articles of food which are permitted are milk, cream and custards, bouillon, vegetable soup, eggs, small quantities of meat, particularly chicken and veal, potatoes, boiled fish, bread in small quantities, dry white wine, and any effervescing alkaline mineral water. The articles of diet which are to be forbidden are butter and fats of all kinds, pork, mushrooms, pastries, confections, peas, all sorts of greasy foods, carrots, asparagus, tomatoes, all fruits containing much sugar, all liquors, coffee, tea, strong beers, and strong alcoholic drinks in general. A similar prescription to that already given which contains antipyrin is also useful in nephritic colic, according to this article.

OBSERVATIONS ON NOSE-BLEED AND ITS TREATMENT.

KOHN, of New York, contributes an article on epistaxis to the *Medical Record* of June 9, 1894, and thinks that in considering the treatment, in view of the etiology, it is proper to consider, first, prevention, and, secondly, the means for causing the cessation of the bleeding.

In the case of a patient giving a history of repeated bleedings without any sufficient exciting cause, a most searching examination of the nose and naso-pharynx is essential; if an erosion or varicosity be found, as it frequently is, on the lower anterior portion of the cartilaginous septum, this should first be dried with absorbent cotton and then cauterized with a saturated solution of chromic acid, as advised by Bosworth and Bresgen. Chiari claims to have found such a lesion in seventy out of eighty-one cases of habitual nose-bleed, and advises the galvano-cautery beyond all other measures. The writer has seen the galvano-cautery cause nose-bleed so frequently that he hesitates to recommend it in these cases to the general practitioner. Angiomatous growths have been the cause, in some cases, of such profuse and repeated hemorrhages as to bring the patient to the verge of syncope; their radical destruction by the flat galvano-cautery is effectual in checking the recurrence of bleeding. Tumors, vascular polypi, adenoid vegetations, enlarged tonsils, if found in a patient suffering from habitual nose-bleed, must be removed.

If the child be a "mouth-breather," attention should be directed to the naso-pharynx and the adenoids, which in all probability will be found removed. Under prevention, the treatment of the generation conditions named under etiology must be considered,—viz., anæmia, chlorosis, hæmophilia, diseases of the heart, lungs, pleuræ, parenchymatous organs, etc., into which it is not the province of the writer to enter. It is mentioned for the purpose of emphasizing the necessity for a thorough physical examination of every patient suffering from nose-bleed. Suffice it to say, that if habitual constipation exist, the bowels should be regulated by mild salines; that in an enfeebled state of the system, iron, quinine, strychnine, the mineral acids, cod-liver oil, may be administered according to the indications. Fresh air, exercise in the open air, and bathing, either in fresh or salt water, are to be commended in

patients who are debilitated by repeated bleedings.

As has been mentioned under the etiology, there are still left, however, some cases in which the bleeding occurs spontaneously, without any lesion being discoverable. These occur more especially in growing children, who otherwise are in good health. Ergot has been recommended as a preventive in these cases by Morell Mackenzie. The writer has found in the fluid extract of hydrastis canadensis a sovereign remedy in these cases; he has had occasion to use it in a large number of cases of nose-bleed in the German Poliklinik, and has found it efficacious in preventing a recurrence in a large majority of cases. It is administered internally in 10-drop doses, in water, every two or three hours. This apparently simple treatment can be recommended with confidence in the cases above mentioned. The alkaloid hydrastinin, in the form of a hydrochlorate, has been put up in tablet form in $\frac{1}{20}$ grain doses, and in combination with ergotin, and is a most elegant method of dispensing the drug. The hydrastis is prescribed, be it understood, as a preventive for the patient who at the time of his visit is not bleeding from the nose, but who gives a history of repeated bleedings. A five-per-cent. solution of the fluid extract of hydrastis in water may be used as a spray for the nose; it may also be used with liquid vaseline, albolene, or kindred preparations, as a spray or brushed into the nose. The drug seems to "tone" the mucous membrane, and by reason of its containing a bitter principle it has, when taken internally, a beneficial effect on the stomach, as is attested by the improved appetite following its use. Its only drawback is, that it has a tendency to cause constipation, but this may be combated by mild salines.

The thorough examination of the nose and naso-pharynx for a local lesion to account for the bleeding is not the less necessary because of the use of hydrastis or any other remedy which may produce a cessation of the bleeding for the time being; for, if an erosion or vascular growth be the source of the hemorrhage, the only rational course is to attack it locally. It is not always possible to find such a lesion, nor have we at all times the instruments with us for making a thorough examination. In these instances the fluid extract of hydrastis will be found a most reliable remedy temporarily.

Under the heading of prevention should be considered also the general laws of hygiene,—pure air in school- and sleeping-rooms, bathing, assimilable food, etc.,—to which it is unnecessary to call your attention.

So many different methods of checking an attack of nose-bleed have been recommended that a review of them will be in place before the writer describes the simple procedure which he has in most cases found satisfactory. The various methods of treatment which have been recommended may be divided into (1) non-medicinal and (2) medicinal.

Non-medicinal methods are: 1. External compression upon the bleeding nostril either by the fingers, iced cloths, ice-bags, or ice. 2. The hot nasal douche, the water having a temperature of 90° F., injected until it emerges from the non-bleeding nostril unmixed with blood. 3. Ice in the mouth, cold cloths, ice, cold metals applied to the spine, immersing the scrotum in iced water. 4. Chapman's bags, containing water at a temperature of 105° F., to the spine. 5. Cups or blisters to the hepatic or renal regions; mustard plasters to any part of the body or extremities for producing counter-irritation.

Medicinal treatment may be by: 1. Astringents in form of powder, insufflated, applied with brush or by means of the spray,—viz., the preparations of iron, the muriated tincture, Monsel's solution, diluted with glycerin; glycerite of tannin, solutions of sulphate of zinc, acetate of lead, sulphate of copper, kino, catechu. 2. Escharotics and caustics. In order to properly apply these, the blood must be rapidly touched off with pledgets of absorbent cotton or lint, so as to expose the bleeding point to view; this may then be touched with a saturated solution of chromic acid, a sixty-per-cent. solution of nitrate of silver, or a crystal of this salt may be fused on a silver probe and be thus applied; nitric acid (which must be used with great care), or the galvano-cautery.

Finally, internal compression has been recommended:

1. By means of absorbent cotton pledgets, introduced into the nostril until the bleeding ceases; the number of pledgets should be counted, so that none are left behind when they are removed; or they may be connected by a strong thread, which simplifies their removal; they may be saturated with astringents in solution,—*i.e.*, tannin, acetate of lead, sulphate of copper, etc.

2. By means of long, narrow strips of iodoform gauze, gently introduced into the bleeding nostril until this is entirely occluded, leaving the end of each strip visible at the anterior nares.

3. By means of small rubber bags, on the principle of Barnes's dilators, introduced into

the nostril empty, and then inflated with air or filled with cold water.

Finally, plugging of the posterior nares with Bellocq's canula; this should be the *dernier ressort*, and under no circumstances should be tried unless all other means fail, as it is itself not devoid of danger; cases of erysipelas, gangrene, sepsis, and even tetanus have been reported as following its use.

The writer recalls the case of a man whom he saw one week after the posterior nares had been plugged; the physician who had introduced the tampon could not remove it, it had become so tightly wedged, and was so fetid that the patient suffered from infection, and said he preferred the bleeding to the treatment. It was with difficulty that the plug was finally removed.

A twenty-per-cent. solution of antipyrin, a ten-per-cent. solution of cocaine, applied by means of cotton pledgets, which are allowed to remain *in situ*, have also been recommended as reliable remedies to stop the bleeding.

The various methods above mentioned certainly form an imposing array.

It has seemed to the writer that the simple rules for the stoppage of capillary hemorrhage are applicable to these cases; the object is, as in hemorrhage, to secure coagulation at the point of bleeding and to keep the clot in place.

The first rule, therefore, is to place the patient, and more especially the bleeding part, at rest; nervousness or fright should be quieted with assurances that there is absolutely no danger; the patient should sit upright in a chair, the head thrown slightly backward; all bands about the neck should be loosened, in order that the circulation may be unimpeded; the patient should then open the mouth as widely as possible, and should breathe through the mouth only; breathing through the nose should be entirely suspended until bleeding ceases, and should be superseded by oral breathing; blowing the nose, hawking, and spitting must be strictly interdicted; we all know how prone patients suffering from nose-bleed are to do these things. In following the instructions thus far given, the interior of the nose is placed at rest and the first indication is fulfilled; whereas, if the patient snuff up cold water, wipe or blow the nose, he displaces clots and favors the continuance of the hemorrhage.

The second rule is to tell the patient, his mouth being kept wide open, to breathe more deeply and more rapidly than he normally does; the respiration may be increased to 30 per minute; the immediate effect of this increased oxygen supply is to increase the force and frequency of the heart's action, and presumably to increase the amount of blood in the pulmonic circulation at the expense of the cerebral; whether it be due to the more thorough equalization of the blood-supply to the body and head, or to the increased muscular action incident to the increased respiratory effort, it has seemed to the writer that the nasal mucous membrane is depleted to some extent by this procedure.

The use of opium and digitalis in hæmoptysis is to a certain extent attended by the same result here obtained,—viz., a more powerful contraction of the heart-muscle.

As soon as the patient tires of the rapid breathing—which he does very soon, perhaps after thirty respirations—he may breathe normally for a few moments, when, if the bleeding has not ceased, he is told to breathe rapidly again; the mouth is to be kept open constantly, and any blood flowing into the pharynx is to be swallowed.

The fact that blood is withdrawn from the brain by this procedure is attested, in the opinion of the writer, by the dizziness which most patients experience when they resort to it, and by the pallor which the face assumes; the same symptoms have been noted by every physician during prolonged auscultatory examinations of the chest; some patients are apt to faint during such examinations; it seems to the writer that a temporary anæmia of the brain is the cause of the phenomena.

The final rule is to tell the patient to enunciate the broad vowel "A" with each expiration; the soft palate is thus brought in contact with the posterior wall of the pharynx during each expiration, the posterior nares are separated from the pharynx, and the blood is prevented from flowing into the œsophagus during the expiratory periods.

The three principal factors in this simple method of arresting nose-bleed are: first, to place the nose at rest by suspending breathing through it; second, rapid and profound respiration, acting as a respiratory and cardiac stimulant, more equally distributing the blood throughout the systemic and pulmonary circulation by abstracting it from the head; and, third, the occlusion of the posterior nares during the entire expiratory period by the intonation of the broad vowel "A" during expiration.

This method is so easily applicable that after every operation in the nose attended by bleeding the writer makes use of it; it is so much

cleaner and simpler after the snaring of a vascular polyp or the removal of an exostosis to make use of this procedure than to apply astringents that interfere with the field of operation, that it is invariably tried by the writer before any other means are applied. Of course it may in some cases of severe bleeding from a larger vessel fail; in these I would then try first the insufflation of tannin, and if this fail, the tamponing of the nostril with long, narrow strips of iodoform gauze, dipped in the glycerite of tannin, with the ends hanging out of the nostril. It is needless to dwell on the advantages of a method of arresting nasal hemorrhage in which no drugs or instruments of any kind are necessary. A few weeks ago the writer had occasion to see a severe attack of nose-bleed occur during the course of typhoid fever; had he been compelled to send to his office for instruments, drugs, etc., the patient might have succumbed in the mean time; the simple method above described had the effect of arresting the bleeding at once.

Astringents in reality cannot cope with a severe nasal hemorrhage, as the clot formed by most of them, especially the preparations of iron, does not extend down to the bleeding-point; they induce superficial coagulation, and some of them produce such a dirty, grumous compound that the field is obscured, and even though the bleeding stop, the patient feels extremely uncomfortable.

AN INJECTION IN DYSENTERY.

℞ Boric acid, ℥ss;
Tannic acid, gr. xlv;
Tincture of opium, gtt. xv;
Water, Oi.

To be given after a dose of castor oil for the purpose of washing out the bowel.

COLLODION FOR RHEUMATISM.

The following prescription is recommended by the *Journal de Médecine de Paris* for May 6, 1894:

℞ Salol,
Ether, of each, 4 parts;
Collodion, 30 parts.

To be painted about the painful and inflamed joint.

PIGMENTATION OF THE SKIN DURING EXHIBITION OF ARSENIC.

M. Richardière (*Medical Press and Circular*, May 30, 1894), showed a patient in whom Fowler's solution, administered during only four weeks, had caused a very marked brown pigmentation of the skin. The doses had been gradually increased, and the pigmentation displayed itself on the eighteenth day. In a few days it became well marked. It affected the skin only, not the mucous membranes. It was much more marked in some regions than others. These were the axilla, the neck, the dorsal aspect of the fingers and toes. There existed also a large number of pigmented lenticular spots, which appeared at parts where the skin had been previously bitten by insects or wounded in similar ways.

VARICOCELE: NEW WAY OF TYING THE VEINS.

In operating on a patient for varicocele, Mr. Macready employed a method for ligaturing the veins which has been suggested by Dr. Malcolm, the anæsthetist of the hospital. The operation was performed by an incision just above the external ring, going up towards the internal ring. Mr. Macready next isolated the vas, which was held out of the way, and then freed the enlarged vein; this was then held up in the form of an inverted V, a loop of silk was passed under the V, then (after being opened) over the instrument holding up the V, and down each side of it, one free end of the silk being next passed through the loop, and both free ends securely tied, thus forming the Staffordshire knot; the portion of veins above the ligature forming the apex of the V was then cut off, and the whole wound closed. By this method the cut ends of the veins are securely attached without further ligature. The advantages claimed by this process are, that one ligature and one knot are used instead of the two ligatures and the three knots of the ordinary method of ligaturing the veins in two places, cutting away the intermediate portion, and tying the two ligatures; also that the testicle is well and thoroughly drawn up.—*Medical Press and Circular*, May 16, 1894.

REPORT OF THE COLLECTIVE INVESTIGATION COMMITTEE ON ANÆSTHESIA AT THE RECENT SURGICAL CONGRESS IN BERLIN.

Professor Gurlt, Berlin, in presenting the report of the committee on anæsthesia, said that, on the proposition of the Society, he had carried out the investigation to a fourth year. In 1893, 63 reports had been received, of which 9 were from abroad. Fifteen reports had been sent from 21 German university clinics. The

total of last year's cases was 51,846. Of these, 32,723 were chloroform administrations, 11,617 of ether, 3896 with ether and chloroform, 750 with chloroform, ether, and alcohol (Billroth's mixture), 2769 with bromide of ethyl, 91 with nitrous oxide. The total fatalities were 20, and of these, 17 were due to chloroform. The average death-rate was 1 in 2587 administrations. The death-rate from chloroform was 1 in 1924. When the results of the previous year were added, the totals were 163,493 administrations, with 61 deaths. The rate of mortality was: chloroform, 1 in 2655; chloroform and ether, 1 in 8014; Billroth's mixture, 1 in 26,268. In fact, only 1 death had occurred from ether narcosis, and that was a case of heart-disease. In correspondence with the low death-rate from ether, its employment had largely increased of late years, from 6200 in 1892 to 11,600 in 1893. Pichet's purified ice chloroform had been used 3890 times, with 2 deaths, so it would appear that the dangers of chloroform inhalation did not lie in any accidental impurity; indeed, the facts seemed to point the other way, and that the danger was directly proportionate to the purity of the chloroform. This consideration had lately led to a different mode of administration. It had been given more slowly, and occasionally atropine and cocaine had been used with it. As regarded accidents, 255 severe cases of asphyxia had occurred, and tracheotomy had to be performed three times. König's cardiac massage, so called, was frequently used, but not always with success. Ether had, therefore, shown itself the least dangerous anæsthetic, ten times less dangerous than chloroform, but it was not without its shady side: it was dangerous in lung-affections. It was agreed to still continue the investigation.

A PRESCRIPTION FOR ASTHMA.

The following prescription is given by the *Journal de Médecine de Paris* for May 6, 1894:

℞ Chloral,
Iodide of potassium, of each, gr. xxx;
Water, ℥iv;
Syrup of bitter orange, ℥vi.
1 to 2 teaspoonfuls three times a day.

THE USES AND MISUSES OF ANÆSTHETICS.

Silk writes a paper on this topic in the *Lancet* for April 28, 1894. In regard to the choice of an anæsthetic, he thinks nitrous oxide, ether, and chloroform are three anæsthetics not only of very different anæsthetizing power, but the administration of which involves very different degrees of danger. Opinions may vary widely as to the anæsthetic to be employed in any one particular instance, but we ought to regard it as a distinct misuse of anæsthetics to employ a stronger or more dangerous drug when one involving less risk would serve the purpose equally well. Here, too, while giving due weight to the nature of the operation, greater prominence should be given to the "personal equation" of the patient than is usually done. If this be done it will be found that under some circumstances a precisely similar operation may call for a different anæsthetic in different individuals. The condition of narcosis is an unnatural one, and under no circumstances can it be induced with absolute safety; although under some circumstances the risk may be so slight as not to amount to very much, still we shall do harm rather than good by attempting to ignore the dangers altogether. With nitrous oxide, for instance, the risk is reduced to a minimum; but, as one or two recent cases have shown us, an element of danger still exists. With regard to the relative safety of ether and chloroform, even the most recent utterances of the Hyderabad Chloroform Commission have failed to convince the writer that "chloroform anæsthesia is free from risk." In this connection it is interesting to note that in the years 1888 and 1889 the total death-rate from anæsthetics in England (as recorded by the registrar-general) was thirty-three and thirty-six respectively; the chloroform death-rate remaining at the same figure for each year,—*i.e.*, thirty-two. In the two following years—*i.e.*, in 1890 and 1891—the death-rate went up to forty-two and sixty-nine, and the chloroform rate to thirty-six and sixty-two respectively. With regard to ether, on the other hand, it is far from judicious to administer it in every case to the total exclusion of chloroform; on the contrary, its routine use is open to many objections. But even admitting many exceptions to its use, there is no doubt that from the point of view of safety, it should stand second only to nitrous oxide on our list of available anæsthetics, and that not until we have quite satisfied ourselves that it is not appropriate should we proceed to the administration of the more potent chloroform. But it has been urged, is it not better that a man should administer an anæsthetic with which he is familiar, rather than attempt to give one requiring more skill than he can pretend to, and for the proper administration of which constant practice is necessary? When the services of others possessing the necessary skill and practice are not avail-

able, this may possibly be accepted as an excuse for the individual; but it is no excuse whatever for the principle and is merely an argument, and a very powerful argument, in favor of the better recognition of systematic teaching of anæsthetics as a necessary part of the medical curriculum.

The next point to which attention is called in the misuse of anæsthetics is connected with what may be termed their mal-administration. If we could bring ourselves to admit that the induction of anæsthesia is a comparatively trivial matter, there would be no objection to relegating the duties to unskilled and youthful assistants; or, for that matter, to the nurse or even the coachman. But all the facts point against this way of looking at it, and, on the contrary, concur in inducing us to think that in any surgical operation the position of the anæsthetist is second only in point of importance to that of the operator; in fact, for the time the responsibilities involved are sometimes even greater.

In working out the statistics some years ago, the author was much struck by the fact that in the majority of instances the fatal cases recorded had occurred at the hands of men whose average standing in the profession was but little over two years. In dealing with young administrators personally, the difficulty with which one has most usually to contend is that of inducing them to concentrate their attention upon what appears to them to be the petty details of the administration; their zeal for the loftier flights of surgery rather carries them away from the matter in hand. It is usual to endeavor to correct this error by repeated insistance upon the excellent maxim that "the administration of the anæsthetic should occupy the sole and undivided attention of one man." As a corollary the administration should be in the hands of the most experienced of those who have undertaken to assist the operator; and, if it were permissible, the words might be added, "that it would often be found of advantage that a stranger should be employed for this purpose." The reason for this suggestion is that one so frequently hears of patients having taken from twenty minutes to three-quarters of an hour to get under, or of not having been properly anæsthetized during the whole course of a prolonged operation, and not infrequently this "dilatory induction" and "under anæsthetization" are due to over-anxiety on the part of the administrator, the outcome of too intimate an acquaintance with the patient and the disease from which he is suffering. After overdosage, which is, of course, a palpable misuse of the anæsthetic, these errors of "dilatory induction" and "under-anæsthetization" are so serious as almost to fall into the category of misuses.

In relation to the next point, the writer refers to Mr. Christopher Heath's presidential address to the Clinical Society of London, delivered on January 25, 1889. Mr. Heath referred to what he called "the exaggerated slowness of modern surgery," and he quoted Mr. Banks, of Liverpool, and Dr. Cheever, of Boston, in confirmation of his opinion that this "slowness" is highly detrimental to the patient. As Mr. Heath expressed his opinion that this is partly in consequence of the prolonged inhalation of the anæsthetic, no more need be said of it than that the writer agrees with this entirely. It has sometimes appeared to me that the operator has had such flattering confidence in his anæsthetist as almost to forget his very existence, and surgical ardor is apt at these times to overpower all other considerations. As a result of this, undue "shock" occasionally follows the operation, even supposing that no immediate ill-effects are noticed. The use of the word "shock" leads the writer to express views not in keeping with the views of the Hyderabad Commission, which claims to have proved that "chloroform and shock are incompatibles." It is doubtful whether we can ever secure actual immunity from shock, and, even if the lighter forms are absolutely abolished, the graver ones are certainly only diminished under any anæsthetic and however far it may be pushed. If, for instance, in operations for the radical cure of hernia, or in simple oöphorectomies, careful attention be paid to the administration, it will usually be found that at the precise moment when the spermatic cord is being manipulated, or the ovary caught in the forceps, the breathing becomes shallower, the pulse flags, and possibly the pupil dilates. As far as the author's experience goes, these changes will take place with either ether or chloroform, the only differences being that under the latter the alterations are more marked and last longer. Nor are such changes prevented, though possibly they may be lessened, both in extent and duration, by the most profound degree of narcosis. In the course of the address already referred to, Mr. Heath insisted upon the importance of maintaining the strength of the patient by careful dieting and proper hygienic precautions taken before the operation as well as after, and it may have been from reading this address that the author got the idea of advising the use of

enemata of hot beef-tea about half an hour before the time fixed for the operation. This plan has been very satisfactory whenever he has had an opportunity of putting it into practice, and is particularly to be recommended when we have reason to expect that the operation will be a long and exhausting one. It is doubtful whether much real good results from the prior administration of brandy. The question of the preparation of the patient comes well within the scope of this article, because it sometimes seems that troubles and difficulties arise which are ascribed to the anæsthetic, whereas they should be more properly attributed to defects in the preparation of the patient for the ordeal which he is about to undergo. The error of underfeeding is too often committed. It is better the patient should go on the operating-table with the risk of getting sick from eating than that he should undergo an operation almost fainting from actual want of food. Then, again, a patient takes an anæsthetic a good deal better, in every sense, if he has been subjected to what one may term the "hospital *régime*" for a few days. This, of course, is not possible in very many instances, but the fact should be borne in mind and the suggestion acted upon whenever possible.

THE MANAGEMENT OF FEVERS.

In the *American Journal of the Medical Sciences* for June, 1894, BURNEY YEO, of London, writes on this subject, and in the course of his paper points out that it is well known that in the presence of putrefactive processes bacillary action is remarkably stimulated, and the intestinal lesions of typhoid fever offer a remarkable illustration of this fact. The glandular infiltration, inflammation, and ulceration observed in the walls of the ileum begin just where the intestinal contents begin to undergo putrefactive decomposition, and they become more and more intense as we descend to the ileo-cæcal valve. They are also observed in the solitary glands of the colon, but here the fluid contents of the bowels are not long retained in contact with the mucous membrane.

If we can restrain early in the disease these putrefactive changes in the intestine, we may confidently hope to restrain the morbid activity of the typhoid bacillus; and thus we see how the production of intestinal antisepsis becomes an urgent and early indication in the treatment of these cases. We are greatly indebted to Professor Bouchard for pointing out this indication so clearly and forcibly as he has done. A calomel or other purge in the initial stage of the fever (if diarrhœa does not exist), and washing out the large intestine twice daily with naphtholated water, enter into Professor Bouchard's and the author's conception of intestinal antisepsis.

But this intestinal antisepsis cannot be carried out thoroughly without great consideration, care, and observation in the matter of feeding the patient. We must adopt a method of feeding which shall by no possibility leave a bulky residue of unabsorbed material to undergo putrefactive changes in the lower part of the small intestine, and by its presence there excite and maintain diarrhœa and provoke an extension of the ulcerative and inflammatory changes dependent on bacillary infection of the intestinal glands. For this purpose we must note carefully what digestive and absorptive activity exists in each individual case. In many this will be found to be extremely small! Let this be well noted, for the neglect to do so is responsible for much avoidable mischief. The fault usually lies in the too free administration of milk. Again and again the writer has seen milk break down utterly as a food for typhoid patients. In cases he has seen it vomited as a firm, cheesy mass soon after it has been taken into the stomach, and in many others he has observed the maintenance of diarrhœa to be dependent upon the irritation of masses of milk curd passing through the inflamed and catarrhal intestine. These are obvious instances of the failure of milk as a food. There are others, far more common, in which it will be found, if the alvine dejections be carefully examined and estimated, that nearly, if not quite all, the casein of the milk taken as food is passed undigested, not as coarse curds, but as a fine deposit from the so-called "pea-soup" stolls. Again and again he has proved this, and shown that the amount of milk absorbed is in many cases remarkably small; and to persist in giving food that is not absorbed is to persist in introducing decomposable material into the intestine when we wish to keep it free from putrefactive decomposition, and to maintain diarrhœa when we wish to keep the bowels at rest. It is the popular mania for feeding which induces us to give food when it simply passes as an irritating decomposing substance along the intestinal tube. Remember that it is useless and injurious in these cases to give food that is not absorbed. Estimate accurately the absorptive capacity of the patient. If he cannot absorb milk at all, give him some other food. If he cannot absorb four pints in the twenty-four hours, give him two; and if he

cannot absorb two pints, give him one; and if he cannot absorb more than one-half pint, give him one-half pint.

Give all food very dilute; milk should be diluted with twice its bulk of water. We wish for antiseptic and eliminative purposes to give as much pure water as the patient will drink; give it, then, as a diluent of his food. When milk, however small in quantity, absolutely disagrees, very dilute, freshly-made, clean soups, in the making of which some aromatic herbs have been used, is the best substitute. Dilute albumin water, made with the white of an egg, is also then serviceable. Give whatever intestinal antiseptic you may be using at the same time as the food, so as to keep it from putrefactive decomposition. The antiseptic principle, when applied to the feeding of typhoid patients, necessitates, then, the administration of food in a dilute form,—food that remains liquid in the body as well as outside it, and that is not prone to be suddenly rendered solid by chemical change, as undiluted milk is. The author urges the necessity of exchanging milk for other food when it is seen that much solid, though finely-reduced casein, is passing in the motions.

As to the use of alcoholic stimulants, the general tendency is to give them too early and in too large quantities. They are needed in moderation towards the end of the most severe and protracted cases, but the less severe cases do better without any. He has used in association with moderate quantities of alcohol, in protracted cases, with marked cardiac debility, infusion of coffee, with more marked and sustained stimulation of the heart, than when alcohol alone has been given.

It is not to be expected that success will uniformly attend the above method of treatment—*i.e.*, an antitoxic or antiseptic method—unless we are enabled to apply it early in the disease. Every day, every hour that is lost in allowing the products of the infective microbe to be diffused widely through the system will tend to lessen the efficacy and minimize the effects of our medicinal antagonists.

If time is lost at the onset, the virus becomes diffused, and an intense general infection may occur; and then, if the individual tissues are especially sensitive to the virus, no remedies may be able to prevent the occurrence of a fatal lesion, such as excessive hemorrhage from deep ulceration or perforation. One great advantage in establishing complete intestinal antisepsis, and in attempting for this purpose to give just as much food as will be absorbed and no more, is that we are enabled, in the advanced period of the disease, to keep the intestinal canal at rest, a most important indication in connection with the intense ulcerative processes which are usually present there in severe forms of typhoid. The writer gives, for this purpose, small enemata of two or three ounces of starch mucilage, each containing about ten grains of tannin and five grains of Dover's powder. This not only allays intestinal irritability, but it is useful in quelling nervous excitement also.

The free use of depressing antipyretic agents merely as reducers of temperature is objected to, as they simply attack a symptom, and they should be reserved exclusively for those cases in which the symptom they attack is for the moment the all-important symptom of the disease,—viz., for states of hyperpyrexia. For this purpose, occasionally, but very rarely, he uses a small dose of phenacetin (5 grains). Even in such small doses the resultant great cardiac depression is at times alarming.

With regard to the routine cold-bath treatment of typhoid, the author passes it without comment, further than stating he has seen calamitous results occasionally follow its indiscriminate application. Its essential value in certain cases of hyperpyrexia is not to be doubted. It, however, attacks a result of the disease only; it is not wholly free from risks of its own; it is difficult to apply continuously, and unless applied continuously, often fails to reduce temperature, except for a brief period. As a tiresome and inconvenient method of treatment, its great claim to adoption was the superior results it was stated to yield.

PENTAL.

Mr. T. E. Constant read a paper at the Odontological Society recently on "The Production of General Anæsthesia for Dental Operations by Means of Pental." He remarked that pental is a new drug only as regards its name and method of preparation; it is, in fact, the amylene of Snow. The manufacturer, C. A. F. Kahlbaum, of Berlin, claims for it a definite and unvarying chemical composition and freedom from all impurities. Pental, or isoamylene, $(CH_3)_2C.CH.CH_3$, is a colorless liquid of low specific gravity, having a constant boiling-point of 38° C. It is obtained from amylene hydrate by heating with acids. It is insoluble in water, but mixes with chloroform, ether, and alcohol. It is extremely volatile and inflammable. It has a peculiar and somewhat disagreeable odor, but is so little irritating that the pure vapor can be inhaled

without the slightest discomfort. In his early experiments, Mr. Constant endeavored to induce anæsthesia by the open method,—that is, by pouring the drug upon a piece of lint lying in a cone-shaped holder; but this he found unsatisfactory owing to the waste of time and the quantity used. Subsequently he devised an apparatus somewhat on the principle of the Ormesby inhaler. In the majority of cases the following phenomena were noticed: Almost immediately the pental was inhaled there were slight flushing of the face and quickening of the pulse, the increased frequency being unaccompanied by any diminution of force. Respiration, if quiet at the commencement of the inhalation, became deep and rapid when the handle of the inhaler was turned full on, but became quieter when it was turned off. The eyes, if closed, opened as the patient became anæsthetized, and had a fixed and staring look. The conjunctiva reflex was rarely lost, although in some cases it was absent after four or five inspirations. In a few instances there was profuse perspiration after about thirty seconds. The duration of the anæsthesia produced was on the average of about one and a half minutes, but varied greatly with the patient and with the character of the respiration, never having been less than a minute or more than three; there was no muscular relaxation. Occasionally the patient's eyes would follow the movements of the operator; otherwise the patient remained quite still. In about five of the one hundred and forty cases the patients declared they were perfectly conscious throughout, but felt no pain and had no desire to move. There were no after-effects, immediate or remote, in any one case where it was administered in this way. However, he had had cases where dangerous symptoms arose, and recently three fatal cases had been reported.

In conclusion, Mr. Constant said that whatever may be the safety of pental as compared with chloroform, there can be no doubt that it is more dangerous than nitrous oxide, and that the last-named agent should invariably be chosen for brief operations. Nevertheless, he was of opinion that those of the medical profession who are in the habit of administering chloroform for operations where nitrous oxide or nitrous oxide and ether could be used equally well should give the preference to pental, because, even if it be no safer than chloroform (and personally the writer believes it to be far more so), the ease of its administration, the certainty of its action, the rapidity of recovery after its use, and the entire absence of after-effects entitle it to a claim upon the consideration of those who deem chloroform a justifiable anæsthetic in dental surgery.—*Lancet*, April 28, 1894.

TOXIC SYMPTOMS PRODUCED BY ANTIPYRIN.

Hood reports in the *Australian Medical Gazette* for May 15, 1894, a case of this character.

Mrs. R. W. Y. had been under treatment for some months, suffering from a very persistent and generalized lichen ruber. Intense itching and irritation were marked features of the case. During the course of the disease she was attacked with influenza, headache and pain in the back being excessive. Antipyrin (5 grains) was ordered given every two hours till relieved. After the first dose the itching and irritation of the skin became much worse. According to directions, the patient took a second dose after the two hours were up; the effect of this was indeed dire. The itching and irritation became so extreme as to render the patient exceedingly ill. Every part of the body, even those which had been healed for some time before, became crimson, and the following morning the disease seemed to be as bad as it had been months previously. Before administering the antipyrin the case had been progressing satisfactorily, and at least two-thirds of the body had recovered from this comparatively rare affection,—lichen ruber. Only ten grains of antipyrin were taken altogether, yet with such serious effect. After its discontinuance the case went on quickly to the stage before antipyrin was used, though for some time the amount of scaly *débris* given off by the skin was much greater than before. The lichen ruber has now entirely disappeared and the patient is perfectly well.

THE TREATMENT OF INCONTINENCE OF URINE IN CHILDREN.

According to *La Tribune Médicale* for May 26, 1894, the following treatment is advisable. After urging the necessity of patience in the treatment of such cases, it is directed that the child shall take milk, alkaline waters, cold douches, if strong enough, and that any anæmic symptoms shall be overcome by proper treatment. Where the incontinence seems to depend upon atony of the sphincter, electricity may be used, the negative pole being placed in the urethra and the positive pole over the pubis. Very feeble currents may be passed for from one to five minutes once a week. Generally twelve to fifteen applications of this kind suf-

fice. It is also well to administer strychnine carefully in such cases, or the following may be used:

℞ Extract of nux vomica, gr. iv;
Reduced iron, gr. xv;
Powdered geranium, gr. xv.
Make into twenty pills and take 1 to 3 a day.

Or we may prescribe,—

℞ Ergotin, gr. viii;
Powdered aloes, gr. ss.
Take 1 pill once or twice a day.

In those cases where there is irritability of the bladder, the treatment with belladonna is applicable, and the following may be used:

℞ Extract of belladonna, gr. iii;
Camphor, gr. xv;
Castor, gr. xv.
Make into twenty pills and take 1 at night.

Or this prescription may be used in the form of a suppository. In still other instances, bromide of potassium, in the dose of 30 grains at night, may be employed; 10 to 15 grains of antipyrin used.

TREATMENT OF PILES BY KOSO-BUDKI'S MODIFICATION BY CHRYSAROBIN.

McLEOD reports a case of hemorrhoids treated in this manner to the *Australian Medical Gazette* of May 15, 1894.

W. M., aged 40, suffered from internal hemorrhoids for twelve years. They used to prolapse every few weeks, and especially if he indulged unduly in alcohol. He says he got relief only when they "burst," causing loss of a considerable quantity of blood. Then they did not trouble him till the next prolapse.

In January, 1893, he began using suppositories made in accordance with the following formula:

℞ Chrysarobin, gr. i;
Iodoform, gr. ¼;
Ext. belladonna, gr. ⅛;
Coca butter, gr. xxx;
Glycerin, q. s. ft. suppositor.;
Cocaine hydrochlor., gr. ¼.

He used altogether three and a half dozen of these—one daily. The hemorrhoids gradually diminished in size from January till May, at which date they disappeared, and he has had no return since then. He can indulge in drink freely without inducing an attack.

An important adjunct to the treatment was the "squatting" position at stool, which he was induced to adopt. He has gained in weight, and feels better in every way.

SYPHILITIC EPISCLERAL GUMMA.

DEMICHERI (*Annales d'Oculistique*, June, 1894) describes two cases of episcleral gumma of the episcleral tissue. He thinks that the cure of this affection is generally effected in about two months, although the duration may be shortened by proper treatment, and under vigorous antisyphilitic remedies the disappearance of the infiltrated area is very remarkable. This treatment necessarily includes the rapid mercurialization of the patient.

THE NASO-PHARYNGEAL TREATMENT IN OCULAR AFFECTIONS.

GUIBERT (*Annales d'Oculistique*, June, 1894) calls attention to the relation between pathological conditions in the naso-pharynx and various ocular lesions, particularly ulcerations of the cornea and lachrymal disease, and concludes that the treatment of the naso-pharynx is of paramount importance. This should include:

1. Antisepsis of the nasal passages.

2. Operations on the nose and pharynx,—for example, the removal of polyps, vegetations, and hypertrophies. If these measures are carefully pursued, astonishingly rapid results will be obtained in the cure of these affections.*

FORMULAS.

For mild conjunctivitis:

℞ Boric acid, gr. x;
Biborate of sodium, gr. iv;
Distilled water, ℥i.
Sig.—Use freely three times a day.

For conjunctival hyperæmia:

℞ Boric acid, gr. x;
Hydrochlorate of cocaine, gr. ii;
Rose-water, ℥ss;
Distilled water, ℥ss.
Sig.—Use freely three times a day.

For subacute conjunctivitis:

℞ Biborate of sodium, gr. viii;
Camphor water,
Distilled water, of each, ℥i.
Sig.—10 drops every four hours.

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* The importance of the relation of nasal disease to ulcerations of the cornea, particularly of the phlyctenular type, as well as to disease of the lachrymal passages, has frequently been referred to in the Progress columns of the THERAPEUTIC GAZETTE, as well as in the Leading Articles. There is scarcely any doubt that many, if not most, of the examples of phlyctenular keratitis practically depend upon naso-pharyngeal disease, and can only be radically and thoroughly cured when this relationship is taken into consideration with the local therapeutic measures.—ED.

The following formulas are recommended by Mittendorf:

For simple blepharitis:

℞ Red oxide of mercury, gr. x;
Vaseline, ʃ℥ss.
Sig.—Apply to the edge of the lid at bedtime.

Or,

℞ Ammoniated mercury, gr. xx;
Powdered camphor, gr. x;
Vaseline, ʃ℥ss.
Sig.—Apply at night.

Or,

℞ Solution of subacetate of lead, gtt. x;
Ointment of rose-water, ℥iii.
Sig.—To be used for the more chronic forms of marginal blepharitis.

PARTIAL SUPPRESSION OF THE EMPLOYMENT OF COLLYRIA.

In another portion of the THERAPEUTIC GAZETTE we have referred to De Wecker's protest against the uselessness of collyria in the treatment of corneal ulceration under many circumstances. In the *Annales d'Oculistique*, June, 1894, appears another article upon this subject, in which the following points are again enumerated:

1. Disinfection of the lids and especially of the palpebral border and the roots of the cilia.
2. Curetting of the ulcers, with irrigation of the infected area.
3. Injections beneath the conjunctiva and in the neighborhood of the infiltrated area with some drops of a solution of sublimate (1 to 1000).
4. The vigorous application of an occlusive bandage without the use of collyria. This bandage should be applied with antiseptic precautions.

SUBCONJUNCTIVAL INJECTIONS OF SUBLIMATE IN OCULAR THERAPEUTICS.

To the numerous reports which have already appeared upon this subject, and many of which have appeared in the THERAPEUTIC GAZETTE, may be added an abstract of a thesis by RIBEIRO DA SILVA (*Annales d'Oculistique*, June, 1894), who, after enumerating the various methods of administering mercury,—namely, frictions, ingestion by the mouth, hypodermic injections, and fumigations,—traces the history of the employment of subconjunctival injections and describes the advantages and disadvantages of the treatment. According to him, the employment of sublimate thus introduced into the eye is of use, and he supports his opinion by a number of observations, which are thus classified:

1. Affections of the cornea, interstitial keratitis, and ulceration with infiltration.
2. Ocular affections consecutive to the operation of cataract.
3. Episcleritis with corneal complications.
4. Iritis.
5. Syphilitic irido-choroiditis.
6. Choroiditis with opacities in the vitreous humor.
7. Choroido-retinitis.
8. Hyalitis.
9. Absolute glaucoma. In one case a patient had had sclerotomy performed on the right eye, and violent pain in the eye was relieved by a single injection of sublimate. In a second case precisely similar pains disappeared completely after three subconjunctival injections.
10. Neuro-retinitis. In all of these affections the author, by employing the sublimate injections after the manner described by Darier and already reported in these columns, obtained excellent results.

EVISCERATION BULBI.

ELISABETH WOLKOMITSCH (*Annales Suisses des Sciences Médicales*, 1 Série, Liv. 8), after giving a complete exposition of the facts known in regard to evisceration, proceeds as follows:

1. Exenteration of the bulbus is generally more easily and rapidly accomplished than enucleation, in which the separate tendons must first be found and cut. [This is an astonishing assertion.—ED.]
2. Exenteration avoids the danger of meningitis, as so far no case of this complication has occurred after operation.
3. The stump left after exenteration is larger and moves more readily than that after enucleation. It is also painless and very favorable for prosthesis. [The investigations of Hotz, of Chicago, which will be found in the Detroit letter of the THERAPEUTIC GAZETTE, July, 1892, demonstrate the inaccuracy of this statement.—ED.]

Dr. Wolkomitsch thinks that the objections to this operation—namely, the greater reaction and the longer period of time which elapses before recovery takes place—are neutralized by the improvement which is obtained; for example, the appearance of the closed eye, even after removal of the artificial eye, is said to be much less disfiguring than after enucleation.

She thinks all ophthalmologists are in accord, that in cases of panophthalmitis exenteration is the only method to be adopted. According to Bunge and Braunschweig, enucleation is in-

dicated in intraocular tumors which have not perforated the sclerotic nor reached the extra-orbital space, and in disease of the bulbus which tends towards a centripetal development; for example, sympathetic ophthalmitis. Enucleation may also be substituted for exenteration when it is necessary to accomplish results in the shortest possible time without regard to cosmetic effect. Optico-ciliary neurotomy may be employed in cases of certain glaucomatous eyes which are painful, but which cannot propagate inflammation. According to Braunschweig, exenteration should be done in cases of staphylomatous degeneration, in panophthalmitis, in foreign bodies in the interior of the eye, iridocyclitis, glaucoma, and sympathetic ophthalmitis; and Bunge further thinks that the operation may be used in cases of phthisis bulbi, especially when they cannot endure the insertion of an artificial eye.

According to Guiaita, the absolute indications for enucleation are malignant tumors and sympathetic ophthalmitis, and for exenteration panophthalmitis and interocular suppuration in general. The relative indications for enucleation are painful phthisis,—especially when it is traumatic, associated with foreign bodies,—and for exenteration hydrophthalmos, staphyloma, absolute glaucoma, and hemorrhagic glaucoma.

Schweigger performs enucleation in cases of malignant interocular tumors, when sympathetic irritation has begun, resection or enucleation, and in all other cases exenteration. According to this author, exenteration is preferable to enucleation for severe wounds, excessive ruptures of the cornea and sclerotic, which are followed not only by destruction of the sight, but generally also by purulent irido-cyclitis and lead to atrophy of the eyes after a tedious course; for smaller wounds, with or without the presence of a foreign body in the eye, if followed by purulent choroiditis, in order to induce as quickly and painlessly as possible the inevitable result of atrophy.

EXPERIMENTAL STUDY OF THE GALVANOLYTIC-KATAPHORIC INFLUENCES ON THE EYE.

SCHOELER and ALBRAND ("Experimentelle Studie über Galvanolytische-Kataphorische Einwirkungen auf das Auge," Wiesbaden, 1894) come to the following conclusions:

1. The metabolism in the interior of the eye is greatly influenced.

2. In galvano-puncture we possess a means of producing therapeutic effects with tolerable certainty in the interior of the eye, and reactive changes to a degree corresponding with the power of the current applied. Although it has been possible by this means permanently to cure a marked case of detachment of the retina associated with a high degree of myopia, no definite opinion upon the value of such a process in the cure of retinal detachment can be given, on account of the lack of a sufficient number of experiments upon the human eye.

3. The kataphoresis of potassium iodide in and through the eyeball is accomplished with changes in the interior of the eye, which (*a*) are different from those observed in galvano-puncture, and (*b*) are to be distinguished from those developed by simple galvanic current, as well by the value of the caustic action as by their greater intensity.

4. The paper urges the possibility of further studies in this line, as opening an inviting field for research.

OPHTHALMIC HEMICRANIA.

AUGUST SIEGRIST (*Annales Suisses des Sciences Médicales*, 1 Série, Liv. 10), after writing fully concerning the cause and situation of ophthalmic migraine, comes to the following conclusions:

The symptoms of ophthalmic migraine can only be explained on the supposition that it is caused by a vaso-motor disturbance which has a duplex localization; the symptoms of the migraine pointing to a localization in the dura, and those of the "flimmer's scotom" to one in the occipital cortex. As the causes of these symptoms he particularly refers (and in this reference we find the indications for treatment) to errors of refraction, especially astigmatism, to excessive over-exertion of the eyes, and to a congenital, often inherited, state of the vaso-motor system. Important etiological factors must be looked for in hunger, fear, excitement, cardiac weakness, etc., and their presence give indications for treatment.

THE PATHOGENESIS AND PROPHYLAXIS OF INTRAOCULAR HEMORRHAGE AFTER THE EXTRACTION OF CATARACT.

TERSON (*Annales d' Oculistique*, May, 1894) believes that affections of the general and local blood-vessels and increased arterial tension are the causes which determine intraocular hemorrhage, and urges the careful examination of the hearts of patients on whom the operation of cataract is to be performed, as well as of the general vascular system. If arterio-

sclerosis is marked, he recommends a prolonged course of iodides, and for a few days preceding the operation a suitable diet, moderate purgation, tincture of veratrum viride, and chloral at night. Every cause of emotion should be avoided; and, finally, in order to end the operation as rapidly as possible, a preliminary iridectomy is advisable. He does not believe that injections of ergotin during the hemorrhage are of any value.

XEROPHTHALMOS CURED BY SUTURE OF THE EYELIDS.

M. RUDINE (*Annales d'Oculistique*, May, 1894) relates the case of a patient who was affected with xerosis of both corneas. The author sutured the edges of both eyelids, except a small portion in the middle, hoping to suppress in this way the evaporation of liquids. The result was excellent. The cornea, which may be perceived through the hole situated between the palpebral edges, is transparent and bright, and the patient can see to thread a needle.

EPITHELIOMA OF THE CORNEO-SCLERAL JUNCTION CURED BY INJECTIONS OF SUBLIMATE.

MARTIN (*Annales d'Oculistique*, May, 1894) had a patient with an epithelioma of the corneo-scleral junction, which reappeared after removal, and he concluded to try injections of sublimate. Two weeks after they were begun nothing but a superficial corneal ulceration remained, which at the end of a fortnight had healed. There was a slight relapse seven months later, which yielded to renewed injections.

PARISOTTI, discussing this case, doubted whether the result was permanent, as relapse had already taken place in one instance, and he thinks a grave responsibility is assumed by the surgeon who advises one suffering from such an affection to retain his eye.

SUBCONJUNCTIVAL INJECTIONS IN CERTAIN OCULAR AFFECTIONS.

BOCCHI (*Annales d'Oculistique*, May, 1894) adds his testimony in regard to subconjunctival injections of corrosive sublimate, to which reference has so frequently been made in the pages of the GAZETTE. He finds them efficacious in serious corneal ulcers without hypopyon, but believes that they have little effect in parenchymatous keratitis, plastic iritis, and traumatic irido-cyclitis. On the other hand, syphilitic retinitis yielded to their influence. In cases where prolonged cure is necessary he regards them with suspicion, because, according to him, sublimate injected under the conjunctiva turns to calomel, and can be found in the tissues.

THE TREATMENT OF EPITHELIOMA WITH CHLORATE OF POTASSIUM.

FUMAGALLI (*Annales d'Oculistique*, May, 1894) believes that chlorate of potassium, in the form of a salve or powder, has a cicatricial effect in cases of ulcerated epithelioma. When the chlorate of potassium does not suffice to cure the neoplasm entirely, its application has some use, because it restricts the ulceration and renders the removal of tissue by operation less extensive.

THE ADVANTAGES AND DISADVANTAGES OF ELECTROLYSIS IN THE TREATMENT OF STRICTURE OF THE LACHRYMAL DUCT.

LAGRANGE (*Annales d'Oculistique*, May, 1894) thinks that electrolysis deserves to rank with Bowman's method in the treatment of affections of the lachrymal ducts, but it must not be used to the exclusion of other methods. It is useful in order to make Bowman's method easier and more complete. Weak currents should be used for two or three minutes only, as currents exceeding six or eight milliampères create sloughs which are followed by incurable strictures. Weak currents, on the other hand, soften the mucous membrane and make the introduction of a large calibre probe an easy matter. He believes that the electrolizer exercises a strong antiseptic influence on affections of the nasal canal. He concludes that electrolysis is a very useful method in preparing the mucous membrane for dilatation with probes; second, that it is dangerous to undertake to cause dilatation by the action of the electric current alone; and, third, that a very valuable antiseptic action is added to its mechanical effect.

TREATMENT OF BLEPHARITIS BY CORROSIVE SUBLIMATE.

ESSAD (*Annales d'Oculistique*, May, 1894), after referring to the fact that ciliary blepharitis—the blepharitis glandulo-ciliaris of Desmarres—is an affection insensible to most medications,—for example, calomel, boracic acid, red and yellow oxide of mercury, cauterization with nitrate of silver, tincture of iodine, oil of cade, etc.,—reports that he has had excellent

success with the adoption of Despagnet's method with sublimate dissolved in glycerin as a vehicle.

PECULIAR ACTION OF SULPHATE OF DUBOISIA.

Dr. H. F. Hansell (*Philadelphia Polyclinic*, June 16, 1894) reports the case of an unmarried girl, aged nineteen, who received, for the purpose of correcting an error of refraction, a prescription of duboisia sulphate, two grains to the ounce. After using this for one day the lids of both eyes were nearly closed by an acute inflammation of the skin and infiltration of the underlying connective tissue. During the next twenty-four hours she instilled the drug three times. When again seen, both lids were almost entirely covered by the tense, red, and swollen lids; the conjunctivæ were not chemosed, the corneæ were clear. The same duboisia was used in another patient's eyes without producing similar effects. The inflammation subsided rapidly, and her family physician reported that she had recently been under treatment for pemphigus. Dr. Hansell attributes this unusual action either to idiosyncrasy or to an irritative local action upon an individual whose blood was disordered.

TREATMENT OF PHAGEDENIC SYPHILITIC ULCERS.

Fournier (*La Tribune Médicale*, June 7, 1894), in discussing the ordinary treatment for phagedenic syphilitic ulcers, advises, where other means fail, liberal applications of iodoform covered in with cotton and rubber tissue. This is often unsuccessful. In case this fails, caustics may be applied, but even these remedies are often followed by failure. Moreover, they are inapplicable when the ulcer is extremely large, or when it is placed upon the face. Under such circumstances it is well to absolutely stop all medication for a time; then, after the patient's health has been restored, to begin again with specific treatment. These cases may be cured or resist all other means of treatment.

PROPHYLAXIS OF POST-AMPUTATION NEURALGIA.

Witzel (*Centralblatt f. Chir.*, No. 23, 1894), on the basis of two dissections, came to the conclusion that post-operative neuralgia was due to fixation of the nerve-endings through the bone or in firm scar tissue. This post-operative neuralgia, particularly in the case of amputation, he proposes to avoid in the following way: After the limb is removed, even before bleeding vessels are secured, the nerve-ends are seized and drawn out as far as possible, the soft parts being stripped back with the back of a scalpel. They are then cut high up transversely. The cut end retracts deep in the soft parts, and is especially important in Pirogoff's operation to divide the bifurcation of the tibial nerve. In shoulder-joint excision the divided extremities of the nerves should always be carefully sought for, pulled out, and cut off. Primary healing is also to be sought for as a means of preventing post-operative neuralgia, since thus there is a scar tissue.

REMOVAL OF TYMPANIC VERTIGO BY REMOVAL OF THE INCUS.

Burnett (*International Medical Magazine*, June, 1894) characterizes chronic tympanic vertigo as that due to adhesions and sclerosis in the drum-cavity, with consequent retraction of the membrana tympani and the chain of ossicles, and the consequent too firm pressure of the stapes into the oval window. The cure consists in liberating the stapes. This is best accomplished by removal of the incus. The reporter has operated on twenty cases for the relief of chronic tympanic vertigo. In the first seven the membrana tympani and the malleus were removed. All cases were relieved; but since there was more or less reaction, the operator determined to remove the incus alone. Thirteen cases of chronic tympanic vertigo were thus operated on, with most encouraging results. There was more or less relief in every case. Full notes of a few selected cases are appended.

THIAFORM.

Schmid (*Therap. Monat.*, April, 1894, quoted by *Deut. Med. Zeit.*, June, 1894), after having tried thiaform in the treatment of burns and as an application to leg ulcers, holds that his results justify the statement that this drug is an admirable application, since it is non-toxic, easily managed, and produces no after-effects, and since it has a special quality of hastening cicatrization even when large surfaces are granulating.

Hoffmann, writing on the same topic, holds that this drug is equalled in healing power by no other therapeutic agent. Ulcers, burns, abscesses, even chancroids, yield rapidly under its use. It is absolutely non-toxic, even when used in large quantities. It is hæmostatic, locally anæsthetic, so much so that the use of

cocaine is often superfluous. It so much lessens wound secretion that drainage is unnecessary. In addition to these many advantages, the drug is odorless and exercises a powerful deodorizing effect on foul secretions.

LYSOL.

ANSCHUTZ and POHL (quoted by *Deut. Med. Zeit.*, June, 1894), in inaugural dissertations upon the antiseptic value of this drug, came practically to the same conclusions in regard to it. These are that it is chemically constant, that it makes a clear solution in water, that it kills micro-organisms in dilute solution, that it does not irritate the hands of the surgeon, that it is only very slightly toxic, and that it is cheap.

THE TREATMENT OF SALPINGO-OVARITIS.

ANVARD (*International Medical Magazine*, June, 1894) states that he has had very satisfactory results in the medical treatment of subacute salpingo-ovaritis by distention of the vagina by tamponing. The vulva and vagina are first washed out with antiseptic solution and a cusco speculum is introduced. Into this is poured a tablespoonful of glycerin with a little iodoform to prevent decomposition. Then with a pair of pincers a tampon as large as a walnut, made of cotton firmly pressed together, is introduced; this is passed into the posterior cul-de-sac of the vagina. The lateral cul-de-sacs are tamponed in the same manner, and, lastly, a tampon is placed in the anterior cul-de-sac; thus the os is surrounded with tampons, each saturated with the glycerin which has been poured into the speculum. These tampons should remain in position for two or three days, and then should be taken out by the physician in attendance. This treatment does not interfere with micturition or defecation, nor does it entirely prevent coition. It often accomplishes cures or considerable improvement in cases which seemed doomed to surgical interference. Not only are good effects observed when the adnexa are affected, but deviations of the uterus, notably retro-deviations, are most favorably influenced.

TREATMENT OF SPINA BIFIDA.

VAN HOOK (*North American Practitioner*, vol. vi., No. 5) holds that iodine injection is a relic of a past surgical age, and in the light of pathological studies is no longer to be practised. The advantages of this method are its ease of application and the fair percentage of cures. The objections are, however, insurmountable. Among these may be mentioned:

1. The method is a blind one, not permitting the operator to exercise any discretion as to the disposal of nerve-elements, but compelling him to bring about obliteration of the sac by the rude method of scar formation and contraction.

2. Many deaths take place immediately from the entrance of the irritant fluid into the spinal canal.

3. No adequate protection can be given to the contents of the spinal canal by the shrivelled sac and its contents. The mere obliteration of the sac is not the sole object of interference.

For the open method the following facts may be pleaded:

1. The operator may preserve and restore to the spinal canal the errant nerve-elements.

2. The meninges can at once be accurately closed under painstaking inspection by sutures, thereby protecting the spinal cord immediately.

3. The spinal canal can, if desired, be permanently closed by plastic methods, rendering recurrence impossible and giving protection to the spinal marrow.

Furthermore, the statistics of the two methods of operating are, so far, slightly more favorable to the open method. Hildebrand sums up the recoveries from injection at sixty-six per cent., while his statistics of the open method give 73.5 per cent. of recoveries. These statistics are, as Hildebrand admits, fallacious, inasmuch as they do not include all the cases of all the operators. A better comparison of the two methods will be found in comparison of the figures given by the operators who have had the greatest experience in the two procedures. Morton's own cases of injection give a percentage of recoveries of sixty-five per cent., while König and Bayer each had 76.9 per cent. of recoveries. This result, it is true, is not far from the general result obtained by adding all the statistics together.

As to the time of operating, Bayer's conclusions, as quoted by the operator, are as follows:

1. The operation for spina bifida sacralis and lumbo-sacralis is immediately and pressingly indicated in all those cases which are born with ruptured sacs, or whose sac ruptures intra-partum or bears a zona medullo-vasculosa, and which do not show paralyses, and are not complicated with severe malformations, except

club-feet. In these cases the nervous elements of the sac are to be carefully guarded.

2. It is also to be undertaken in cases which show paralysis as soon as the child is strongly developed and danger of infection threatens from the side of the exposed medullary constituents of the sac.

3. In cases which bear a sac closed and covered by normal skin the most delicate period of infancy is to be passed by as an operation period. Still, the operation, if the child is otherwise healthy, is not to be put off too long, for fear of traumatic injuries unavoidably acting upon the sac.

The modes of operating are:

1. Simple excision of the superfluous sac-wall, with suture of the remainder of the meninges and of the skin.

2. The method of Mayo Robson and of Bayer is the same as the first method, together with suture of the muscles or fasciæ over the defect.

3. Osteoplastic or chondroplastic methods. (Seneko, Botroff.)

4. A combination of excision with suture of the sac, plastic operation upon the muscles or fasciæ, and osteoplasty.

Finally, the author reports a case in point. Child, aged five months; tumor was in the lower lumbar region, forming a thin-walled cyst about three inches in diameter. The skin was opened by two curved incisions and dissected from the cyst-walls; the cyst was fully exposed and opened to one side and its contents inspected. Numerous large nerve-trunks ran freely through the sac, to be inserted at its apex; others followed the walls of the sac. The nerves were dissected free and pushed into the spinal opening. The meningeal sac was first cut through and sutured. Two flaps were raised from the lumbar fasciæ and brought together. In order to further close the spinal opening the rudimentary laminæ of the spinous processes were nicked and arched together; strong silk sutures were used to approximate the fascial flaps. The skin-flaps were carefully brought together with fine catgut. Recovery was uninterrupted.

A NEW METHOD OF VALVULAR GASTROSTOMY WITH A MUCOUS-MEMBRANE LINING.

ANDREWS (*Journal of the American Medical Association*, May 19, 1894) proposes a new method of valvular gastrostomy of the mucous membrane and lining; the operation is as follows:

The stomach is drawn through the external wound; incision is made very near the upper border directly downward about two inches; the lower part of the anterior wall is raised, turned out through the incision, and spread out flat. Over the lower end of the cut two incisions are made through the loose mucous membrane, one to the right and the other to the left, each extending about three-quarters of an inch laterally from the main incision. From the end of each of these two mucous-membrane incisions another cut is made downward through mucous membrane parallel to the axis of the body, about one and a half inches long. At the lower end the two incisions are turned at right angles towards each other, but not meeting, the separation of one-quarter of an inch being left between them. A velvet-eyed English catheter (No. 10 English scale) is laid along the middle of the quadrangle of mucous membrane mapped out by the last incision, and is allowed to project about one inch below. Two flaps of mucous membrane are then turned up from each side over the tube, free edges being secured to each other by Lembert stitches placed so as to turn the mucous surfaces in and bring the connective-tissue surfaces in contact. The extreme looseness of the submucous tissue allows the membrane to close over the tube without force. The raw surface left by raising the two quadrangular flaps of mucous membrane is covered in by drawing the edges on each side of the artificial channel over the latter and uniting them by suture. The stomach wound is then closed with a Czerny-Lembert suture; the edge of the orifice from which the tube projects is stitched to the skin. Finally, the wound in the abdominal wall is closed, excepting the point occupied by the tube. As yet, this operation has not been tried on the human.

TREATMENT OF FRACTURES OF THE JOINTS.

ROTTER (*Medicinish-Chirurgisches Centralblatt*, No. 17, 1894) takes as typical joint-fracture those injuries, due to indirect force, so frequently observed about the knee and ankle, in which there is not only injury of the bone, but the ligaments are extensively torn and there is more or less displacement. The most important therapeutic means for combating these injuries are immobilization, massage, and the early institution of passive motion. The proper combination of these agencies occasions quick healing and the most complete functional restoration. Immobilization is the first treatment

to be instituted, not only because of the relief it gives to pain, but because by this means the lacerated parts are held in their proper position until a certain amount of repair has taken place and they have no spontaneous tendency to drop out of position. If there be displacement, this must be forcibly corrected at once. In case of fracture about the ankle-joint, the knee-joint should be bent to relax the calf muscles, and the foot should be held at right angles to the long axis of the leg. Before application of the dressing, thorough examination must be made to determine that the foot is neither displaced antero-posteriorly nor laterally. Immobilizing apparatus should be worn for eight days. Complete circular plaster bandage should never be used unless the patient is constantly under observation. Even when the patient is carefully watched, the trouble of removing this bandage is so great that it constitutes a serious disadvantage. The safer are the ordinary splints or fracture-box. These allow of the application of the ice-pack upon the seat of swelling. After eight days massage and passive motion are instituted. A plaster bandage is then applied for eight days, the foot and ankle being held in normal position. Sometimes anæsthesia is required when involuntary muscular contractures interfere with the proper position of the foot and ankle; the bandage is then removed and massage and passive motion is practised. Active movement should not be attempted before the fifth week.

TREATMENT OF TUBERCULOSIS OF THE TONSIL.

Tussaud (*Lyon Médical*, April 22, 1894), on the basis of three cases of tuberculosis of the tonsils, concludes that abuse of alcohol and tobacco are predisposing factors in the development of this affection. As treatment he prefers the galvano-cautery, carrying this not only through the diseased tissues, but into the surrounding comparatively healthy tissue, thus preventing absorption by forming a barrier of sclerotic tissue. In two of the reported cases the local lesions were cured, but, owing to persistence in bad habits, the patients ultimately perished of general tuberculosis.

TREATMENT OF AURAL VERTIGO.

MacKenzie (*British Medical Journal*, No. 1740, 1894), after a discussion of the lesions, the diagnosis, and the causes of aural vertigo, holds that the prognosis is unfavorable so far as recurrences are concerned, unless the condition is due to a foreign body.

The treatment of an acute attack requires that the patient should be put in a recumbent position so long as the vertigo is increased by standing up. The excitability of the nervous centres is subdued by bromide of potassium given in moderate doses. In gouty cases, bromide of lithium, also the salts of potassium, colchicum, and salicylate of sodium are often of service, especially when preceded by a mercurial purge. Counter-irritation, in the form of a small blister behind the ear, is sometimes of benefit. Any local disorders of the middle or external ear should receive attention. During the intervals between paroxysms, quinine, 3 or 4 grains three times a day, and in some cases double this dose, is of service. Salicylate of sodium appears to do good; pilocarpine is recommended given hypodermically, beginning with 3-minim doses of four-per-cent. solution every day, and increasing the dose to $\frac{1}{16}$, $\frac{1}{4}$, or even $\frac{1}{3}$ if the drug is well borne. The arterial tension should be well observed. For the purpose of keeping this down, mercury is particularly serviceable, an occasional blue pill being given once or twice a week, or, in place of this, calomel may be used, 3 to 5 grains, to be taken whenever there are premonitory symptoms, such as increased tinnitus, fulness in the head, or headache.

FRACTURED PENIS.

Mende (quoted in *Monatshefte f. Prak. Derm.*, Bd. xviii., No. 9) reports a case of fractured penis. The patient, aged forty, ran with erect penis against the back of a chair. He experienced severe pain. Catheterization the following day drew blood only. The penis was greatly swollen, bluish-black towards the symphysis, and curved with the convexity below. Fluctuation was felt behind the glans where the bending was most marked. Repeated efforts at catheterization failed. The boutonnière operation was performed and a Nélaton catheter passed through the peritoneal opening. Some days later the penis was opened freely on the base, the torn urethra was sutured, and the patient recovered, with complete restoration of function.

CONGENITAL HYDROCELE OF THE NECK CURED BY DRAINAGE AND COMPRESSION.

Dickinson (*British Medical Journal*, May 12, 1894) reports a case of congenital hydro-

cele of the neck cured by drainage and compression. The patient was three years old. At birth the hydrocele was noticed and gradually increased until it extended from the sternal line of the left clavicle in front to the middle line behind, and entirely filled the sulcus between the neck and the shoulder. By means of a trocar and canula eight ounces of greenish-brown albuminous fluid were withdrawn; a small incision then allowed of digital exploration; the cyst was drained by means of several strands of fishing-gut. The discharge became muco-purulent, owing, no doubt, to sepsis; the temperature ran up, the seton cut out, and the wound continued to discharge more or less freely till it healed, five weeks after the operation.

PREVENTION OF CATHETERIZATION CYSTITIS.

GROSGLICK (*Monat. f. Prak. Derm.*, Bd. xiii., No. 9) holds that since the urethra contains many micro-organisms which, in spite of all antiseptic precautions, may be pushed into the bladder by a clean catheter, and since disinfection of the urethra is neither possible by local washings nor by the administration of antiseptics by the mouth, and since urinary retention offers the most favorable culture-field, this dangerous complication is best avoided by the most scrupulous cleanliness, by soft rather than metallic instruments, since there is less insult to the mucous membrane by the slow progressive evacuation of the urine even in cases of retention of short standing, since a sudden evacuation occasions bladder hyperæmia, which is most favorable to the growth of micro-organisms. Catheterization should be repeated every six hours until the bladder can be evacuated spontaneously. If for any reason periodic catheterization is not possible, a permanent catheter should be employed.

PERFORATION OF A CHRONIC ULCER OF THE DUODENUM SUCCESSFULLY TREATED BY EXCISION.

DEAN (*British Medical Journal*, May 12, 1894) reports a case successfully treated by excision. The patient, a woman of twenty-seven, entered the hospital complaining of intense abdominal pain. She vomited frequently; she had a feeble pulse of 120; a rapid and small respiration; her belly was moderately tympanitic. Diagnosis of acute general peritonitis was made and operation performed. On opening the peritoneal cavity purulent fluid escaped. In the region of the gall-bladder some flakes of lymph were found, in the centre of which gas bubbled, forming a froth. This gas was found to come from the duodenum, perforation being there situated three-quarters of an inch from the pylorus. Around the perforation a distinct induration could be felt. This indurated area was excised, and the elliptical opening thus made into the duodenum was sewed up by silk sutures, according to Lembert's method. The peritoneal cavity was washed out with warm weak boracic lotion, well sponged, and the wound closed. The patient recovered without incident, and was up and about three weeks after operation. Two weeks later she was attacked by acute intestinal obstruction due to a band. A second operation was performed, in which she perished. On post-mortem examination two perforations were found, each the seat of ulceration, above the seat of constriction for which the last operation was performed.

ABDOMINAL HYSTERECTOMY IN WHICH THE URETER WAS RESECTED AND IMPLANTED INTO THE BLADDER.

PENROSE (*Kansas City Medical Index*, No. 5, 1894) reports the following case of immediate implantation into the bladder of a ureter which had been divided during a cœliotomy.

A white woman, aged forty years, had a scirrhus cancer of the cervix uteri. Growth extended as high as the internal os, and infiltrated the left broad ligament, in a dense hard mass, to a distance of about one inch from the cervix. There was no involvement of the vagina. No symptoms of ureter obstruction.

Cœliotomy performed July, 1893. It was found that the left ureter passed directly through the hard mass in the left broad ligament, and in order to remove completely all diseased tissue, it was necessary to excise about one inch of the ureter,—the portion involved in the broad ligament.

After the uterus had been cut away at the vaginal junction, the distal end of the ureter was ligated with silk, the vagina closed, the peritoneum sutured over the seat of operation as much as possible, and the proximal portion of the ureter then implanted into the body of the bladder. The operation was similar to that used by Van Hook for uniting a ureter after complete transverse division, by lateral implantation of the proximal into the distal portion (*Journal American Medical Association*, March 4, 1893). An incision was made antero-posteriorly in the body of the bladder

somewhat less than half an inch in length. A needle armed with fine silk was passed through the bladder-wall from without in, at a point about a third of an inch from the edge of the incision on the right, and brought out through the incision. It was then carried through the right wall of the ureter close to the extremity, carried back through the incision in the bladder, and passed through the bladder-wall from within out, close to its point of entrance. A similar suture was passed on the left side of the incision in the bladder and through the left side of the wall of the divided ureter. Traction on these sutures dragged the ureter into the bladder, and when tied they held it in this position.

The loose peritoneum, which formed a partial investment to the ureter, was drawn down and sutured to the peritoneum of the bladder by a continuous silk suture around the line of union of the ureter with the bladder; the abdomen was closed without drain. A soft-rubber catheter was introduced through the urethra and retained for three days. The patient made an unusually easy recovery.

A recently-reported case of Dr. H. A. Kelly, where a divided ureter was immediately united by lateral implantation of the proximal into the distal portion, and the case just reported, go to show that the advice of our surgical text-books should be modified, and that, if the patient is able to endure a slightly-prolonged operation, and the anatomical conditions are suitable, it is better immediately to implant the proximal portion of the ureter into the distal portion, or into the bladder.

HYSTEROPEXY IN CASES OF INTRACTABLE RETROFLEXION.

BRAITHWAITE (*British Medical Journal*, May 19, 1894) suggests the following modification of the mode of performing the operation of ventro-fixation of the uterus in cases of intractable retroflexion, which he supports with ten cases operated upon by the method given below.

The central incision in the abdominal wall is made, as usual, low down, and with its lower end not more than an inch, or even less, above the pubes; but he cuts only through the peritoneum itself in the upper half of the incision; in the lower half it is left intact, with as much fascia and cellular tissue as possible, the muscles, however, being drawn aside. Two fingers of the left hand are then passed in and the uterus pulled up to, and held firmly in contact with, the uncut peritoneum exposed in the lower half of the wound. The fundus is then just visible above the edge of the peritoneum. The anterior surface of the uterus is now fastened to the peritoneum by silkworm-gut sutures, nearly as done by Drs. Napier and Schacht.

This plan of operating has several advantages. Two sutures can be placed from above downward at the extreme edges of the anterior surface of the uterus, in addition to the usual transverse ones. This insures a more complete and extensive coaptation of the peritoneum. It also does away with the objection raised by H. A. Kelly, that the adhesion produced elongates, so that soon the uterus is merely suspended by a band.

TUBERCULOSIS OF THE BLADDER.

At a meeting of the Brooklyn Surgical Society, November 16, 1893, DR. PILCHER (*Brooklyn Medical Journal*, vol. viii., No. 6) presented the following interesting case:

A man some twenty-five years of age applied to the Methodist Hospital for relief from chronic cystitis. He had some cough and emaciation, but the severity of his bladder-troubles exceeded all else. Symptoms had progressed for a year. For a period of ten days he was kept under observation at the hospital, during which time, from every half-hour to one hour, he would urinate with great pain, the urine containing characteristic deposits of cystitis. A cystoscopic examination was made, but owing to the rapid supervention of hemorrhage it was impossible to prolong examination to any great extent or derive any special information. Upon rectal examination, a thickened condition of the vesiculæ seminales was distinctly defined and a special nodular deposit in the right vesicle was evident to the touch. The usual treatment for cystitis was carried out during his stay, including systematic washings of the bladder by mild antiseptic agents, but without benefit. Examinations for tubercle-bacilli in the urinary deposits met with negative results. However, notwithstanding the failure to find bacilli, the pulmonary trouble lent force to the belief of tuberculosis of the bladder.

He was therefore subjected to suprapubic cystotomy, in which operation Dr. Bristow's method of dilating the bladder with air instead of water was employed. The appearance of the bladder shown would indicate that had water been used for dilatation it would have resulted in extravasation of its contents, on account of the existence of certain diverticula with very thin walls; also the bladder was like

a flaccid bag, having very little expulsory power and not contracting when it was opened.

Section disclosed a small abscess cavity in the supravesical space, just behind the symphysis. This was opened and evacuated; then, the incision being continued, the bladder was opened and its contents permitted to escape. The weak condition of the patient forbade further surgical interference. The granular condition of the mucosa was noted. The patient made a good recovery. The iodoform tampon applied at the time of operation was withdrawn on the third day, and from that time until the time of his death, some six weeks later, his bladder-symptoms were greatly relieved. Drainage through the suprapubic opening was sufficient to enable the bladder to be readily relieved. A portion of the time a double drainage-tube was kept in the opening, and at other times a simple iodoform gauze mesh was placed in the opening. The bladder was washed out daily; and at varying intervals, averaging twice a week, half an ounce of a ten-per-cent. iodoform emulsion was injected into the bladder and permitted to remain.

Post-mortem examination revealed diffuse tuberculosis of both lungs, with advanced destruction of portions of them, with diffuse tubercular deposits in the small intestines, and a granular condition of the mucous membrane of the bladder throughout its whole extent. This was less marked in the mucous surface of the trigone, the smooth reddish surface of which was suggestive of recently-healed ulceration. The ureters were free from disease, nor was the kidney involved. A curious feature was, that on either side of the bladder there was an attachment of a loop of small intestine, and by long traction the inflammatory adhesion has been elongated so as to form a band and a diverticulum from the bladder on each side.

Pilcher also cites the case of a young man, aged twenty-one, with tubercular antecedents, suffering from bladder-symptoms indicating the presence of profound disturbance, on whom suprapubic cystotomy was done by him, and a patch about the size of a half-dollar, at the lower lateral wall of the bladder, exposed, presenting a velvety surface deeply congested. Bacilli were absent from the discharges in this case as well. For several months drainage through the suprapubic opening was continued. Finally, the fistula was allowed to close, all his symptoms subsided, and up to this report (nearly two years) he remains well.

In still another case the author had recourse to the above means with similar satisfactory results.

In discussing the paper, Dr. Wood said that a young woman under his care, giving symptoms indicating bladder tuberculosis, was subjected to suprapubic cystotomy some three years ago; a small ulceration was found, scraped, and treated with iodoform. The symptoms subsided and the suprapubic wound was allowed to close. A few months afterwards she suffered from a return of symptoms. The bladder was reopened and the ulcerated spot again recognized in the same position, a little larger. It was treated as before, with the addition of lactic acid. A year later no recurrence was noted.

EFFECTS OF ERYSIPELAS ON EPITHELIAL CANCER.

COLLINS (*Kansas City Medical Index*, No. 5, 1894) reports the following case:

Eighteen months ago his attention was called by a patient to an ulcer nearly opposite the ear on his right cheek. This ulcer was one and a half inches in longest diameter, one inch in the shortest, forming an oval with irregular edges. The discharge was slightly purulent, tinged with blood. The granulations were soft and bled on the slightest touch.

The patient stated that twenty years ago there appeared at this point a small elevation, which frequently formed a scab, which every ten or twelve days would fall off and then reform, giving but little trouble and receiving but little treatment.

Nineteen years ago he was treated for a time with ointments and lotions, also some medicine was administered without special benefit. He was then assured that this was skin cancer and incurable. The ulcer gradually increased in size and depth. Some benefit was derived from a lotion of zinc sulphate and salt, dissolved in water to make a mild astringent solution. The ulceration, however, continued giving inconsiderable pain, but much annoyance by its presence.

On November 12 he suffered from an attack of erysipelas of the face. This ran no unusual course, spreading rapidly from the tip of the nose, over the scalp, to the nape of the neck. The external dressing was of ichthyol and lanolin, which seemed to give relief and comfort.

As the erysipelas faded out and desquamations followed, the ulcer seemed to assume a more healthy appearance. Granulations of a normal character developed, and in about two weeks the ulcer was entirely healed. The cicatrix on March 1 is slightly indurated, but smooth and firm, presenting the appearance of normal cicatricial tissue.

INGROWING TOE-NAIL.

TOUSEY (*New York Medical Journal*, May 19, 1894) has modified Cotting's operation by applying Thiersch's skin-grafting on the second day, shortening the time of healing by a week. Cotting's operation consists in excising the overlapping soft tissues; this can be performed under cocaine. The method of performing this operation is as follows: The point of the scalpel, with its edge held vertically forward, is placed at the side of the nail close to the matrix, and is pushed vertically through the toe close to the nail. The knife is then carried forward, converting the part of the toe external to the nail into a flap. The edge of the knife is then turned backward, and this flap is entirely severed by an oblique cut outward and backward. The nail is not cut at all and the matrix is not even exposed, but the side of the toe is hollowed out so that the side of the nail projects at all points beyond the flesh. The area thus denuded is about the size of a silver quarter of a dollar. The dressing consists of simple gauze for a week, then gauze moistened with balsam of Peru, the dressings being changed every three days. Complete cicatrization takes at least three weeks, and the surface requires a protective dressing for a week or two beyond that.

Tousey, to hasten cicatrization, applied iodoform gauze as the first dressing; two days later he removed this by soaking in sterilized salt solution, thus occasioning no bleeding. A graft sufficiently large to cover the entire raw surface was taken from either the leg or the arm. Over this graft rubber tissue and gauze moistened with sterilized salt solution (0.6 per cent.) was applied, and was changed every other day for a week, at the end of which time the surface was found healed.

APPLICATION FOR BURNS.

The following is UNNA'S prescription for burns (*Medical Press and Circular*, May 23, 1894):

℞ Lanolini, parts x;
Adipis benzoati, parts xx;
Aq. calcis, parts xxx.

EPIDIDYMITIS.

ROLLET (*Medical Press and Circular*, May 23, 1894) holds that when epididymitis occurs as a complication of gonorrhœa, irrigation of the entire urethra should not be intermitted, since otherwise there is danger of the second testicle becoming involved. The best treatment, in his opinion, is salicylate of sodium, a drachm and a half daily, or tincture of pulsatilla, 10 drops three times daily. The action of this agent is not as constant as that first named. Refrigeration is the best means of allaying pain; this is produced either by application of ice to the inflamed parts or by the spray of chloride of ethyl. The latter must be used with caution, on account of the sensitiveness of skin of scrotum. Reclus recommends the application of compresses of warm water. Rollet has been using for some time back, with considerable satisfaction, guaiacol, which he applies by means of a brush over the surface daily; not more than 1 gramme, or 20 drops, is used each time. The pain produced by the agent is slight and of short duration, while that appertaining to the malady disappears in about two hours, and the temperature falls.

ARTIFICIAL HYPERÆMIA IN THE TREATMENT OF DELAYED UNION.

BUECHNER (*Journal of the American Medical Association*, May 26, 1894) calls attention to artificial hyperæmia in the treatment of delayed union,—a comparatively unknown, but very efficient, method.

Helferich proves, by citing cases where an increased blood-supply, caused by some pathologic condition, produces a thickening of bone in adults and a lengthening, or thickening, or both, in children, that hyperæmia plays a prominent part in the formation of new bone. It will not, however, cause the production of callus, but will only increase it when started by some other natural or artificial means.

To illustrate this method, Helferich takes a fracture of the humerus for an example. He first applies a flannel bandage from the fingers to a point about an inch and a half below the fracture; at the same distance (an inch and a half) above the fracture he applies a piece of rubber bandage or tubing tightly enough to retard the return of the venous blood, but not to interfere with the arterial circulation. This produces a marked congestion in the parts surrounding the fracture which are left uncovered by the bandages. At first the constriction is only allowed to remain a short time, but the duration of its application is rapidly increased until it is soon left on day and night. The writer has found its almost continuous application for a period of ten days sufficient in the cases in which it has effected a cure.

During the use of this method the fracture

should be properly immobilized. In the case of the upper extremity this is easily accomplished by the use of splints. In fractures of the leg a plaster-of-Paris dressing is employed, and the constrictor applied at its upper margin. To admit of the swelling and congestion at the desired point, the plaster dressing is applied quite snugly, the part where the congestion is desired being either heavily padded with cotton or large fenestræ being cut in the dressing. In fractures of the femur the Buck extension is used, the flannel bandage and constrictor being applied as in the case of the humerus.

This method should not be used where there is any tendency to a varicose condition of the veins. Helferich says it will not produce this condition in normal vessels. The same writer reports eight cases "in which, at the time a fracture is usually healed, there was very little or no callus." Six were fractures of the leg and two of the thigh. By the use of this method alone he accomplished a cure in each case in a few weeks. He also reports four cases —three of the leg and one of the forearm—in which it was employed subsequent to the nailing together of the fragments. All resulted in cures.

These cases indicate that in constriction and the resulting hyperæmia we have a valuable adjunct to the better-known methods of treatment in delayed union and pseudarthrosis.

BASSINI'S OPERATION.

FOWLER (*Brooklyn Medical Journal*, No. 6, vol. viii.) states that the object of Bassini's operation is to restore the normal location and tension of the displaced and relaxed structures. He accomplishes this in the following manner: The sac, together with the fascia lata and pectineal fascia, is exposed by an incision, which is placed parallel with and just below Poupart's ligament. The sac and its neck are isolated by blunt dissection to a point beyond the crest of the pubes. The sac is opened and its contents caught by a clamp to prevent untwisting, a ligature passed through the twisted portion and the neck securely ligated. The portion of the sac beyond the ligature is now cut away and the stump replaced, so as to expose the parts forming the canal and the oval ring. The latter is now closed as follows: The first suture is applied close to the spine of the pubes and passes through Poupart's ligament, after which the latter is somewhat elevated, and the suture is made to include the pectineal fascia at the level of the pelvic crest. The following sutures are placed in a similar manner, approaching the crural vein; the fourth includes the falciform fold of the fascia lata and the pectineal fascia. None of the sutures are tied until all are placed in position. In securing the sutures, Bassini ties first those placed above. A C-shaped suture line arises in consequence of the tightening of the first three sutures, which is considerably depressed at its middle. The skin is now sutured separately. The operation occupies from fifteen to thirty minutes. Patients are allowed up after ten days; no truss worn.

Bassini's experience with this method includes fifty-four operations in fifty-one individuals (forty women and eleven men); the youngest of these was seventeen and the oldest seventy. Recovery took place in all cases without complication. Eight left the hospital after nine days, twelve after ten days, five after eleven days, and four after twelve days. The remaining twenty-one left the hospital after from thirteen to twenty days. None of the patients have since worn a truss and all are able to work. The time of observation extends over periods varying from three to nine years in twenty-seven cases; between two and three years in fourteen cases; the remainder for less than two years. In at least forty-one cases the cure remained permanent for periods extending from two to nine years.

STERILIZED CATGUT IN A CONVENIENT AND PORTABLE FORM.

KILIANI (*Medical Record*, May 19, 1894) advises that catgut should be sterilized as follows:

Dry catgut, not kept in oil, is put in absolute alcohol for twenty-four hours to remove all moisture, is cut off in pieces of two and three yards' length, one of which is rolled on a glass rod and then put in a glass tube open at one end and with a little hole in the other, through which a short end of catgut is pulled. The glass rod is removed and the roll of catgut is in the glass tube. This tube, with its contents, is put in a second glass tube a little wider and longer, with one end open. Then the tube is put in a dry hot-air sterilizing apparatus, the temperature of which is brought within one hour up to 176° F. This is to cause evaporation of the alcohol and water. The open end is then closed by melting the glass, and the hermetically-sealed tube is put again into the sterilizing oven, the temperature of which is brought within one hour up to the course of two hours more to 140° C. (284° F.), which is kept up for a whole hour. Another hour is consumed in letting the temperature gradually sink

again; then the outer tube is scratched with a file and it is ready for use. Immediately before using it, the outer tube is broken and the inner tube, with its contents, put for two minutes into the solution in which the instruments are lying.

This is Reverdin's method, slightly modified as to the method in which the catgut is stored.

TREATMENT OF DIPHTHERIA.

OLSON (quoted by the *Universal Medical Journal*, June, 1894) orders the following dissolved in spray in diphtheria:

℞ Oil of eucalyptus, ʒii;
Benzoate of sodium, ʒi;
Bicarbonate of sodium, ʒii;
Glycerin, ℥ii;
Lime-water, enough for a quart.

Sig.—Spray on the membranes for from three to five minutes every half-hour.

SUCCESSFUL LIGATURE OF COMMON CAROTID AFTER SECONDARY HEMORRHAGE FROM THE INTERNAL MAXILLARY.

JONES (*British Medical Journal*, June 16, 1894), in a case under his charge, which had been operated on for an epithelioma so extensive as to require the removal of the left half of the axilla, reports successful ligature of common carotid after secondary hemorrhage from the internal maxillary. Secondary hemorrhage occurred some two weeks after operation. He ligated the common carotid artery, then injected twenty ounces of warm saline solution into the median cephalic vein. The patient recovered.

TREATMENT OF PHARYNGEAL DIPHTHERIA.

HAMILTON, in cases of pharyngeal diphtheria, advises the following:

℞ Mercury biniodide, gr. ii;
Oil of peppermint, ♏ii;
Sugar, ʒi. M.

Sig.—Place from 5 to 10 grains in powder every hour or two on the tongue, not giving any water for a few minutes afterwards.

The author advises that if laryngeal or tracheo-laryngeal symptoms develop, a quart of unslaked lime should be placed in a vessel of appropriate size and half an ounce of turpentine poured on it, then enough boiling water to completely cover the lime; the vessel should be placed under a cotton sheet, thrown also over the head of the nurse and affected child. A cloud of vapor will be emitted for ten minutes at each sitting, which can be repeated hourly, if required, for the paroxysms of difficult breathing.—*Universal Medical Journal*, June, 1894.

FRACTURE OF DISLOCATED HUMERUS.

MCBURNEY (*Annals of Surgery*, April, 1894) was called to see a patient who, nine days before his visit, had broken his humerus and dislocated the head of the bone. The upper fragment was exposed and drilled and a strong hook screwed in it, thus allowing direct traction and after some difficulty replacement of the bone. The patient recovered with a useful arm.

EXTIRPATION OF THE LEFT LOBE OF THE LIVER.

TRICOMI (*Rev. de Chir.*, 1894, quoted by *British Medical Journal*, June 16, 1894) was consulted by a young man suffering from tumor of the liver the size of a fist. Around the base of the latter an elastic ligature was secured. The hepatic layer of perineum was dissected up around this ligature and stitched to the parietal. After two weeks the ligature came away and the tumor still remained fixed. An attempt to remove it by wire ligature was no more successful, nor did the thermo-cautery prove any more satisfactory, since it did not arrest bleeding. Some days later the growth was cut away and bleeding was stopped by the thermo-cautery and iron solution. In about two months the wound was quite healed. In this relation Ceccherelli and Bianchi's method of arresting hemorrhage from the liver is of interest. This consists of the application of a quilled suture. The portion of the liver which it is proposed to excise is circumscribed by two strips of whalebone, each perforated from end to end by several holes. A long needle armed with a double thread is passed through the hole at one end of one strip of whalebone, then through the liver-structure, and finally through the hole at the corresponding end of the second strip. Other ligatures are passed through all the other holes in both strips and through the intervening portions of liver. One of the ends of the first ligature is tied to the cut end on the opposite side, and then all the ends are closely tied together along the whole length of one strip of whalebone and afterwards along the second strip. In this way the interposed liver-tissue is closely constricted and gradually crushed.

All the ligatures having been secured, the liver may be freely incised without dread of hemorrhage. In order to avoid leaving a large raw surface exposed, and to guard against secondary hemorrhage, it is recommended that the free ends of the ligatures attached to one strip of whalebone be passed across the divided pedicle and tied to those of the other strip. In this way the hepatic tissue may be compressed at the seat of section.

JANET'S METHOD OF TREATING GONORRHŒA.

ANDREY (*Monat. f. Prak. Derm.*, Bd. xviii., No. 11) writes enthusiastically of Janet's method of treating gonorrhœa. This consists in irrigation of the entire urethra with solutions of permanganate of potassium varying in strength. The meatus, glans, and foreskin are first carefully cleansed. All these surfaces are then powdered with a mixture of talc and boric acid. No internal treatment is used at all; even alcohol need not be absolutely forbidden. The patient is warned that the treatment is somewhat painful. Complications are conspicuous by their absence. The armamentarium consists of a vessel holding from three to four pints of liquid, to which is attached a rubber tube two and a half yards long. A couple of glass nozzles with round points are kept in antiseptic solution. These are conical, and so made that they can be passed into the urethra at least two-fifths of an inch. One of these is attached to the end of a rubber tube. The reservoir is so arranged that it can be hoisted to a height sufficient to overcome the resistance of the compressor urethræ muscle, —usually three feet; exceptionally six or seven feet are required. The patient first empties his bladder, then lies down on his back, and after cleansing of the external parts, introduces the glass canula, which is attached to the tube of the reservoir, and turns on the stream. After a few ounces have passed into the urethra and out again by the sides of the canula, the meatus is clasped closely around the latter, and, the reservoir is watched to see when the liquid begins to flow into the bladder. Sometimes this lasts a few seconds; occasionally, some time elapses before this resistance is overcome. The stream is interrupted at intervals by pressure on the rubber tube, thus repeatedly distending the anterior urethra. Sometimes the resistance of the sphincter is not overcome by the first treatment, practice being necessary on the part of the patient. He is instructed to make an effort at urination. This facilitates deep irrigation. When the patient experiences a strong desire to urinate this indicates that the bladder is full. It is better to inject not more than a half-pint to one pint. The glass tube is withdrawn, and the patient is instructed to urinate, occasionally stopping the stream by putting the finger over the meatus, this action distending the urethra. The bladder is distended once again after this and is again emptied. The strength of the solution varies from 1 to 1000 to 1 to 6000 of permanganate of potassium. The stream should be repeated every twenty-four hours. In very recent cases twice daily; in old cases these daily treatments should suffice to bring about a cure. When the patient presents himself in the florid stage, eighteen to twenty days is usually necessary. These washings are only stopped when the gonococcus is no longer found in the discharge. As long as the latter is white and thick it probably contains these micro-organisms. Immediately after the injection there is swelling of the entire penis, including the foreskin, and an abundant reddish serous discharge. Urination is painful. This continues for four or five hours, and is a favorable sign.

Contraindications to this treatment are the presence of cystitis or follicular urethritis. Epididymitis is a distinct indication for its employment. The report states that eighty per cent. of his cases were well in ten days; fifteen per cent. required longer treatment; five per cent. left his hospital uncured. The results are placed on very recent and very old gonorrhœas. Usually, after this there is still a discharge, which lasts for four or five weeks and then disappears spontaneously. Eight or ten days after treatment coitus is allowed, the patient being instructed to wear a condom to avoid reinfection.

SURGICAL INTERVENTION IN INJURIES OF THE SPINAL CORD.

BEREZKINE (*La Tribune Médicale*, June 7, 1894) communicates a case of successful intervention for the relief of symptoms dependent upon traumatism of the cord. A young man shot himself with a revolver in the præcordial region. There resulted complete paraplegia, retention of urine and fæces, anæsthesia in the lower part of the belly and the legs, the wound of entrance was about the level of the sixth rib, about an inch within the left nipple-line. The eleventh dorsal vertebra was painful on pressure. A longitudinal incision was made along the spinal processes of the eleventh and twelfth dorsal vertebræ and of the first lumbar. Every-

thing was found normal, the wound was closed. Ten day's later, as there was no change in the patient's condition, laminectomy of the three lower dorsal and first lumbar vetebræ was performed. When the dura mater was incised and the cord pushed to the right, a foreign body was felt in the body of the eleventh vertebra; this was extracted by means of a longitudinal incision of the cord and dura mater. Four days after operation micturition and defecation were normal. The patient regained the power of motion and anæsthesia was rapidly disappearing.

PAINFUL CYSTITIS TREATED BY DRAINAGE OF THE BLADDER.

LUMEAU (*Anal. de la Polioclinique*, No. 20, 1894) holds that suprapubic drainage is always to be preferred in the treatment of painful cystitis, since thus is allowed at the time of operation a thorough inspection of the interior of the bladder and the removal of tumor, stones, or other mechanical causes keeping up irritation. In tubercular cases especially this method should be employed, since the perineal route usually aggravates the trouble.

LACTATE OF COCAINE IN CYSTITIS.

WITTZACK (cited by the *Journ. de Méd. de Paris*, No. 22, 14 anée) employs the following formula in the treatment of tubercular cystitis, holding that the lactate of cocaine greatly lessens or entirely relieves the pain incident to the employment of the lactic acid:

℞ Lactate of cocaine, 2 parts;
Lactic acid and distilled water, 10 parts.

After having emptied and washed out the bladder, about 15 drops of the solution are applied to the ulcerated spot.

WOOL FATS.

IHLE, writing upon various wool fats,—namely, lanolin, adeps lanæ, œsypus,—holds that the latter is better borne in the great majority of cases than any other fatty preparation, not excepting resorcin, since it never dries and does not decompose. The paste he employs is made up of equal parts of œsypus, zinc oxide, and olive oil. When adeps lanæ is employed, the most suitable combination is as follows:

℞ Adeps lanæ, 15 parts;
Zinc oxide, 10 parts;
Olive oil, 5 parts.

Adeps lanæ is admirably adapted for the making of mercurial ointment, according to the following formula:

℞ Hydrarg., 20 parts;
Adeps lanæ, 50 parts;
Benzoat., 10 parts;
Ol. bergamot, 3 parts.

In the treatment of seborrhœa the author employs the following prescription:

℞ Resorcin, 5 parts;
Ol. ricini, 15 parts;
Balsam of Peru, 3 parts;
Spiritus vini, 77 parts.

This is used in the morning, and in the evening there is rubbed into the head,—

℞ Adeps lanæ, 40 parts;
Ol. amygdal.,
Sulph. præcipitat., of each, 5 parts;
Oil of rose, 1 drop.

—*Anal. de la Polioclinique*, No. 20, 1894.

THE ANTISEPTIC VALUE OF ICHTHYOL.

ABEL (quoted by *Deut. Med. Zeit.*, June, 1894), as a result of bacteriological research, found that preparations of ichthyol in weak solution quickly killed pyogenic streptococci, but the staphylococci and certain bacilli resist its toxic action. He advises that the drug should be kept pure or in fifty-per-cent. solution, since in weaker preparations the staphylococci of pus may remain alive for a long time, and thus such dilutions may actually infect a previous sterile wound. All weaker solutions should be sterilized by boiling before applying to raw surfaces.

EIGHT HUNDRED AND FIFTY-TWO OPERATIONS FOR STONE IN THE BLADDER.

Since 1877 (*British Medical Journal*, June 16, 1894), FREYER has operated on eight hundred and fifty-two cases of stone in the bladder,—two hundred and forty-five by perineal lithotomy, six by suprapubic lithotomy, three by rapid dilatation of the urethra in females, and five hundred and ninety-eight by litholapaxy. Every patient suffering from stone was operated on, no matter in what condition he presented himself; nor was any patient lost sight of until a cure had been effected. In the litholapaxy series a full fenestrated lithotrite was used to avoid the danger of *débris* becoming impacted. Bigelow's simplified aspirator is the one employed. The canulæ are only slightly curved, with the eye on the concave surface close to the end. They range from No. 6 to

18 English. Of the five hundred and ninety-eight cases of litholapaxy, there were four hundred and thirty-four adults and one hundred and sixty-four children. The adults varied in age from sixteen to ninety-six years, the average being forty-eight and a quarter years; the children from one and one-half to under sixteen years, the average being just seven years, three of them twice. Indeed, it may be stated that recurrence is as frequent after lithotomy as after litholapaxy. Great stress is laid on completing the operation in the first sitting. In five hundred and ninety operations in only eight was it necessary to have recourse to a second sitting, and in only two cases designedly. The time occupied by the operation varied from a couple of minutes to two hours. If possible, the stone should be entirely crushed upon the first introduction of the lithotrite. Patients were usually anæsthetized, but lately the operator has been in the habit of operating without anæsthesia when the urethra is capacious, or by producing local anæsthesia with cocaine. Where stricture complicated, this was at once treated either by rapid dilatation or by cutting. Moderate enlargement of the prostate was no serious impediment to the operation. Very great enlargement of course requires suprapubic operation. In these cases of hypertrophied prostate there is always much bleeding, and this renders complete evacuation more difficult, since the fragments of calculus are liable to become embedded in clots of blood, which have to be broken up by the aspirator and then removed with the entangled *débris* of stone. Where cysts complicated the disorder no special treatment was adopted. Kidney-disease, in all its stages, was frequently present, but, so far as the performance of litholapaxy goes, the author never desists, no matter what the state of the kidneys may be. Among the five hundred and ninety-eight litholapaxy operations there were thirteen females. One stone weighed over six and a quarter ounces; it was uric acid and unusually hard. Encysted calculi were also attacked by the lithotrite, since these stones usually lie in wide-mouthed pouches. When possible, the stone was generally withdrawn into the wider cavity of the bladder. If this was not possible, it was crushed *in situ*. The diagnosis, especially in cases of small stones, was established by means of an aspirator and canula. When the calculi are small, most careful sounding may fail to discover them. If, however, a full-sized canula is employed, the aspirator applied, and the process of pumping in and exhausting water, moving the eye of the canula about in the bladder in various directions, and inserting it into pouches, should such exist, should a small stone be present, it will be carried with force against the eye of the canula by the outward stream, and a ringing click announces its existence. The reporter was in the habit of always performing lithotomy in children, having had a record of one hundred and ninety-seven cases, with only one death. Since 1885 he has performed litholapaxy one hundred and fifty-eight times, with two deaths. His first one hundred and nineteen cases were all successful; he then lost two cases consecutively. Among the five hundred and ninety-eight litholapaxy operations there were eleven deaths: nine among four hundred and twenty-six operations on adults, and two among one hundred and sixty-four on children; five cases perished of exhaustion, two of peritonitis, one of acute pyæmia, one of acute nephritis, and two of acute cystitis.

The eleven deaths in five hundred and ninety-eight litholapaxy operations—namely, four hundred and thirty-four adults, with nine deaths, and one hundred and sixty-four children, with two deaths—give a mortality of 1.84 per cent. on the whole, or about two per cent. in adults and 1.22 per cent. in children. There were two hundred and fifty-four lithotomies in his practice, with eleven deaths,—namely, fifty-four adults, with ten deaths, and two hundred children, with one death, giving a mortality of four and one-third per cent. on the whole, or eighteen and one-half per cent. in the adult, with one-half per cent. in children.

Freyer announces that he is an entire convert to the operation of litholapaxy in nearly all cases. Of his last three hundred cases of stone he was forced to resort to the cutting operation in six instances. He therefore strongly opposes Sir Henry Thompson's adage to the effect that suprapubic lithotomy is indicated in cases of large calculi.

CONSERVATIVE TREATMENT OF FEMALE PELVIC ORGANS.

GOODELL (*University Medical Magazine*, July, 1894), after considering the above subject at length, arrives at the conclusion that it is manifest that during the period of woman's menstrual life her mental, physical, and social welfare depend greatly upon the continuance of the catamenial and reproductive functions. Therefore, the conversation of those organs which preside over these functions is of the utmost importance, and should be so regarded by the physician.

The fatality of chronic diseases of the ap-

pendages is greatly overrated, and that factor need not greatly disturb us or hurry us on to hasty operative interference by abdominal section. Polk's method of curetting the womb and packing its cavity is commended.

Many women with adherent tubes and ovaries, and pus in these organs, suffer either no inconvenience whatever or very little indeed from that condition *per se*. There are, again, others who have pains and aches only at their monthly periods. Let, however, their health break down from grippe, from influenza, from malaria, from overwork, or from nerve-strain, then symptoms may arise from their hitherto latent pelvic lesions. In most of these cases no surgical operation whatever is needed; for, if the woman can be restored to her former condition of health, she will lose her local symptoms and become symptomatically well. Goodell reports curing cases with all the objective and subjective symptoms of ovarian or of tubal abscess by the use of rest, massage, and electricity, by a general building up of the whole system, and by topical treatment. In some few of these cases this treatment was followed by conception, pregnancy, and parturition.

Supposing simple therapeutic measures fail, or that the use of the curette and of uterine drainage are not followed by relief and the surgeon is driven to surgical interference, after breaking up the adhesions, he should never remove the healthy appendage unless the menopause has been already established, or unless there exists a good reason for hastening it on, such as the presence of a uterine fibroid or of uterine disease or the insanity of the patient. On the other hand, should both ovaries be intrinsically diseased, and their tubes contain much pus, both uterine appendages should be totally removed no matter what the age of the patient. Generally the pus is limited to the tubes, and in that case one ovary, barring its adhesions, —which, of course, must be broken,—is healthy enough to be left behind. In such case the tube alone, if possible, should be removed, and not the healthy ovary, or the healthy ovaries, if both happen to be sound. Nor is it needful to remove the womb on account of disease of its adnexa. Some of the author's most notable cures have been in cases in which the tubes were so rotten that they were either pinched off close to the womb, or else were removed by a wedge-shaped incision in the womb itself, the uterine wound either being closed by suture or seared by the actual cautery.

In such cases, unless contraindicated, Goodell endeavors to leave behind at least a small fragment. In several cases in which a piece of an ovary not larger than a bean was left behind, not any menstrual or sexual changes whatever took place in the women. Should the uterine appendages be merely adherent and not intrinsically diseased to any extent during active menstrual life, they should be released, and, perhaps, the worse of the two extirpated, but not both.

From his own large experience, Goodell states that in the majority of women who have been castrated the sexual impulse soon abates in intensity, much sooner than after the natural menopause; and that in many cases after the lapse of a few years it wholly disappears.

NEPHRITIS IN ITS SURGICAL ASPECTS.

KEYES (*American Journal of the Medical Sciences*, June, 1894) reaches the following conclusions after a thorough discussion of the above subject:

1. Healthy urine is sterile.
2. Purulent urine is always microbic.
3. Microbic infection takes place from within the body by a number of methods in the course of disease; it is often brought about by instrumental manœuvres on the part of the surgeon.
4. A healthy organism and vigorous bladder may cope successfully with microbic invasion and rid itself spontaneously, or with a little aid, of all damage arising therefrom, showing little or even no inflammatory response.
5. A suitable condition of the patient's soil is essential to the propagation and perpetuation of inflammatory phenomena upon the urinary tract, after microbic invasion.
6. This condition, intensified by traumatism and physical weakness, notably of the degenerative variety, is most intense when there is vesical distention with atony, and when the ureters are dilated and the kidneys involved in the changes incident to tension below,—namely, atrophy and sclerosis above, with or without surface catarrh.
7. Under these circumstances surgical pyelonephritis is most likely to declare itself as a result of microbic infection from below (occasionally from above), in the course of suppurative disease or after operative interference.
8. Asepsis, antisepsis, and sterilization of urine are ends to be aimed at in genito-urinary surgery; but, like all other greatest goods, not yet attained in perfection. Much, however, can be done by local means in a prophylactic and curative way; little by internal medication, and possibly as much more than by any other means by flushing the urinary passages with natural mineral waters.

TAPPING OF LATERAL VENTRICLES.

FRANK (quoted by the *Universal Medical Journal*, June, 1894), after a study of the subject of tapping of the lateral ventricles, comes to the following conclusions: 1, For distention of the ventricles from acute, simple, or tubercular meningitis, is clearly indicated, and, other things being equal, promises recovery; 2, for effusion of blood into the ventricles from trauma or disease, makes recovery a possibility; 3, for abscess involving the ventricles, is immediately and imperatively demanded; 4, for effusion into the ventricles from brain tumors, may afford relief to symptoms; 5, for chronic hydrocephalus, moderate distention of the ventricles, without enlargement of head, may afford relief; 6, for chronic hydrocephalus, great distention of ventricles, enlargement of head will lead to a fatal result.

HOT BICHLORIDE POULTICE.

ROGERS (*Northwestern Lancet*, June 15, 1894) warmly commends, in the treatment of variously assorted septic conditions, bichloride poultice after incision and for drainage. Where this is necessary, the affected part is splinted and is completely enveloped in hot bichloride gauze, or cloths wrung in a hot 1 to 3000 bichloride solution. Over this is placed a thick layer of absorbent cotton wrung out in the same solution. The whole is entirely covered by a pad of oiled silk, retained in position by a roller bandage. He holds that wherever the ancient flaxseed poultice is indicated, the bichloride can be substituted with eminently more satisfactory results.

THE VALUE OF CAUSTICS IN THE TREATMENT OF MALIGNANT DISEASE.

In the discussion of the above subject at the meeting of the American Medical Association, in the Section on Surgery, held in San Francisco, June 5, 1894, which was opened by Dr. H. O. Marcy, he stated his belief that malignant disease is, 1, local; 2, constitutional. Also, he receives far better results from local operations by the use of the knife, carefully eliminating the tissue wide of the area of disease, so far as we can ascertain its position. He believes caustics simply make an open wound subject to further infection.

DR. SHIELS called attention to the fact that when we apply a caustic, no matter how slight or how strong it may be, with the hope of curing a malignant disease, we are applying it to a tissue which is undergoing rapid cellular change, and are liable to make a non-malignant growth a very malignant one. He also points out that there is a condition in post-syphilitic gummatous growths which does not allow of immediate cure by the use of iodide of potassium, and that one should give a very careful consideration, especially to tumor of the tongue of syphilitic history before he proceeds to remove the tongue.

DR. GRISWOLD agreed with the foregoing conclusions and reported the case of a woman coming to him for operation five years ago. Her system was involved, but through the operation she has lived much longer than she possibly could have done without operation or recourse to milder measures. This reporter describes his method of applying caustics in epithelioma on the face, hand, or lip, where the patients refuse to submit to the knife. The caustic is made of sulphate of zinc, dried so that the water of crystallization is all driven off by heat, till it bubbles up after the water of crystallization is driven off, and then powdered in a mortar promptly and quickly, so that it shall not absorb water from the air; put it in a bottle and pour in enough chemically pure sulphuric acid, so that when it stirs up it will make a paste so thick that when you put a little stick or little glass rod in it, a good-sized drop will adhere to that stick or glass rod and not drop off. Have plenty of absorbent cotton or plaster, and apply that all over the surface. It is a little painful, but in about ten minutes it destroys the tissue to the depth of about one-eighth of an inch. Then take the point of your pen-knife and scrape it off until it begins to bleed, to the quick; then apply it again, and after four or five applications the physician must use his judgment as to whether he has got the cells out or not. Dr. Griswold has met with but one failure in twenty operations. It may take an hour and a half or two hours, according to the size of the epithelioma. Any simple ointment is afterwards applied.

Reviews.

ILLUSTRATED DICTIONARY OF MEDICINE, BIOLOGY, AND ALLIED SCIENCES. By George M. Gould, A.M., M.D. Philadelphia: P. Blakiston, Son & Co., 1894.

We are told in the title-page of this magnificent work of reference that it includes the pronunciation, accentuation, derivation, and definition of the terms used in medicine and the various sciences closely related to that art, and

on looking through the sixteen-hundred-odd pages of which the work is composed, we cannot help being impressed with the fact that the author has carried out to the letter the statements as to the scope of the work contained on his title-page and in his preface. The author very distinctly prefers the newer methods of spelling which he has introduced into the columns of the *Medical News*, of which he is editor, but has been sufficiently broad in his ideas to give the spelling of many words in both the new and old form, although throwing his influence in favor of the former. He advises the dropping of the diphthong, and distinctly favors phonetic spelling. So far as we can judge, the dictionary deserves to at once take a high rank among the medical lexicons of the world. It cannot, of necessity, be as full as is that of Foster, with its four enormous volumes, nor as ready for reference as the smaller dictionary which Dr. Gould has already prepared. As it stands, it is a work showing not only a wide knowledge of all those branches of learning required of the lexicographer, but as a marvellous piece of work to have been done by practically one individual. In such a book mistakes must necessarily occur. Thus we notice that the old-fashioned and practically useless antidotes for phosphorus are given under phosphorus, on page 1072,—namely, sulphate of copper and French oil of turpentine. The first of these has been proved to produce death more rapidly than the phosphorus, and the second to be absolutely unobtainable under ordinary circumstances, and useless when employed. Again, in the table on poisons, on page 1136, we notice that acetanilid and antipyrin are characterized as corrosive poisons, which they certainly are not under any circumstances. Much less can they be considered such if Dr. Gould's own definition is to be relied upon,—namely, "a substance that destroys organic tissue either by direct chemic means or by inflammation and suppuration." These drugs may destroy the blood and other tissues by direct chemic means, but certainly not by what we ordinarily mean by a corrosive action. We also notice that under the remedial measures to be employed in poisoning by chloroform, strychnine is not mentioned, and in poisoning by the various poisonous fungi nothing is said of the value of atropine, which is practically a specific in many such cases. Under snake-bite no mention is made of the value of permanganate of potassium and strychnine, which are certainly the two most powerful antidotes that we have to-day, as proved in the case of the first drug by the experiments of Weir Mitchell and Reichert, and its practical application by many clinicians, while the employment of strychnine has been heralded the world over with an enormous number of successful cases by its originator, Dr. Müller, of Australia, and many of his followers.

Correspondence.

NOTE ON STRYCHNINE NITRATE IN DIPSOMANIA.

To the Editors of the THERAPEUTIC GAZETTE.

DEAR SIRS:—It seems to me time that some one should file a demurrer to the emphasis which is given the acidulous radical in the literature upon the use of strychnine nitrate in dipsomania and allied states. Strychnine and nux vomica were used for the alcohol habit half a century ago, and its therapy in these cases is exactly based upon its physiological action. This dynamic action resides in the alkaloid and not in the acidulous radical of any of its salts. Any salt in appropriate dose will produce that therapeutic effect which is considered very valuable by all clinical observers with experience in treating drunkards and tobacco users.

In modern times a royal road to notoriety has been discovered, the toll on which is simply to present some rare base combined with an old and valuable acid, as a new bromide, and then publishing a paper on the "new" drug in the old diseases in which the old salts have been long used, or else some old base is combined with an acid which forms a salt not much used, and the "new" salt is highly lauded as a discovery in therapeutics. In the present case the profession seems to have even followed the lead of the leading charlatan of the century, and to consider nitrate of strychnine a new remedy without a substitute.

A somewhat large clinical experience carefully digested, has enabled me to say to those who learn only at the bedside, that sulphate of strychnine is equally as valuable as is the nitrate in the treatment of all habits. The proper and scientific method of expression is to use the term strychnine in discussions of this subject. As regards the facts, I regard strychnine as simply invaluable in all cases of alcohol, tobacco, or morphine habit, especially after the cure is nearly completed.

G. WALTER BARR, M.D.,
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